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Experimental and calculated property data are now available. See HELP  
PROPERTIES for more information. See STNnote 27, Searching Properties  
in the CAS Registry File, for complete details:  
<http://www.cas.org/ONLINE/STN/STNOTES/stnotes27.pdf>

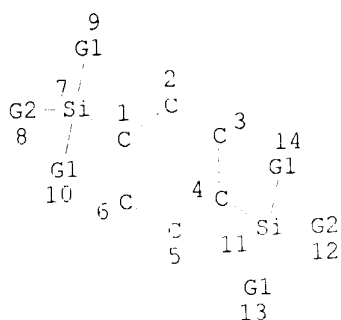
=> FILE HCAPLUS  
FILE 'HCAPLUS' ENTERED AT 11:13:19 ON 11 APR 2003  
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FILE COVERS 1907 - 11 Apr 2003 VOL 138 ISS 16  
FILE LAST UPDATED: 10 Apr 2003 (20030410/ED)

This file contains CAS Registry Numbers for easy and accurate  
substance identification.

=> D QUE  
L12 STR



VAR G1=AK/CB  
 VAR G2=H/OH/O  
 NODE ATTRIBUTES:  
 DEFAULT MLEVEL IS ATOM  
 DEFAULT ECLEVEL IS LIMITED

GRAPH ATTRIBUTES:  
 RING(S) ARE ISOLATED OR EMBEDDED  
 NUMBER OF NODES IS 14

STEREO ATTRIBUTES: NONE

L14	663	SEA FILE=REGISTRY SSS FUL L12
L15	571	SEA FILE=HCAPLUS ABB=ON L14
L16	15	SEA FILE=HCAPLUS ABB=ON L15 (L) (PREPOLYMER? OR POF/RL)
L17	1	SEA FILE=HCAPLUS ABB=ON L16 AND ?ACETYLEN?
L18	40	SEA FILE=HCAPLUS ABB=ON L15 AND ?ACETYLEN?
L19	1	SEA FILE=HCAPLUS ABB=ON L18 AND PREPOLYMER?
L20	1	SEA FILE=HCAPLUS ABB=ON L18 AND POF/RL
L21	35	SEA FILE=HCAPLUS ABB=ON L18 AND (PREP OR IMF OR SPN)/RL
L22	36	SEA FILE=HCAPLUS ABB=ON L17 OR L19 OR L20 OR L21
L23	24	SEA FILE=HCAPLUS ABB=ON L22 AND (POLYMER? OR ELASTIC?)/SC, SX
L24		STR

C==C  
 1 2

NODE ATTRIBUTES:  
 DEFAULT MLEVEL IS ATOM  
 DEFAULT ECLEVEL IS LIMITED

GRAPH ATTRIBUTES:  
 RING(S) ARE ISOLATED OR EMBEDDED  
 NUMBER OF NODES IS 2

STEREO ATTRIBUTES: NONE

L26	40	SEA FILE=REGISTRY SUB=L14 SSS FUL L24
L29	34	SEA FILE=REGISTRY ABB=ON L26 NOT 1-10/M
L30	33	SEA FILE=REGISTRY ABB=ON L29 NOT 1-4/B
L31	22	SEA FILE=HCAPLUS ABB=ON L30
L32	20	SEA FILE=HCAPLUS ABB=ON L31 (L) (PREP OR IMF OR SPN)/RL
L33	0	SEA FILE=HCAPLUS ABB=ON L31 (L) POF/RL
L34	34	SEA FILE=HCAPLUS ABB=ON L23 OR L32 OR L33

=&gt; D L34 ALL 1-34 HITSTR

L34 ANSWER 1 OF 34 HCAPLUS COPYRIGHT 2003 ACS

AN 2002:904255 HCAPLUS

DN 138:5081

TI Production of curable polysiloxane compositions containing platinum-based catalysts

IN Mueller, Philipp; Fehn, Armin; Bauer, Michael; Rohrmueller, Heinz-Max; Boeck, Andreas

FA Wacker-Chemie GmbH, Germany

SO Ger. Offen., 10 pp.

CODEN: GWXXBX

DT Patent

LA German

IC ICM C08L083-04

ICS C08G077-08; C08J005-02

CC 37-6 (**Plastics** Manufacture and Processing)

Section cross-reference(s): 39

FAN.CNT 1

	PATENT NO.	KIND	DATE	APPLICATION NO.	DATE
FI	DE 10123937	A1	20021128	DE 2001-10123937	20010517
FRAI	DE 2001-10123937		20010517		
OS	MARPAT 138:5081				

AB Curable polysiloxane compns. comprise polysiloxanes A and B or polysiloxanes C instead of A and B, and platinum-based catalyst D. The polysiloxanes A have units of the general formula  $(CH_3)_aR_2bR_3cSiX(4-a-b-c)/2$ , where  $R_2$  substituents are the same or different and can be monovalent aliph. unsatd. C2-C10-hydrocarbon groups optionally contg. halogens, oxygen, nitrogen, sulfur or phosphorus atoms,  $R_3$  substituents are the same or different and can be aliph. C-C multiple bonds, or monovalent C3-C20-hydrocarbon groups optionally contg. halogens, oxygen, nitrogen, sulfur or phosphorus atoms, X substituents are the same or different and can be oxygen or bivalent C1-C20-hydrocarbon groups optionally contg. halogens, oxygen, nitrogen, sulfur or phosphorus atoms, a, b and c can be independently 0, 1, 2 or 3 and the sum  $a+b+c$  is .ltoreq. 3, and at least 4% of the polysiloxane A units have c value which is not equal to 0, X is not oxygen and there are at least two aliph. unsatd. groups  $R_2$  per mol. The polysiloxanes B have Si-H bonds. The polysiloxanes C have the same general formula as polysiloxanes A with the difference that  $R_2$  substituents can be hydrogen atoms and at least 4% of all units in polysiloxanes C have c value which is not equal to 0, X is not oxygen and, per mol., there are at least three aliph. C-C multiple bond-contg. groups and at least two Si-H groups, or at least two aliph. C-C multiple bond-contg. groups and at least three Si-H groups. The compns. can be used in variety of applications including prodn. of silicon rubber-based tackifiers. The compns. have the advantage of good storage stability at ambient temp. and pressure but can be easily crosslinked at higher temps. Thus, a compn. was produced which comprised (1,5-cyclooctadiene)bis(phenylethynyl)platinum as catalyst D, vinyltrimethylsilyl-terminated polysiloxane A comprising 93% mol. of dimethylsiloxy units and 7% mol. of methylphenylsiloxy units, and trimethylsilyl-terminated polysiloxane B comprising dimethylsiloxy units and hydrogenmethylsiloxy units.

ST platinum complex catalyst curable polysiloxane compn prodn

IT Silicone rubber, uses

RL: **POF (Polymer in formulation)**; TEM (Technical or engineered material use); USES (Uses)

(curable polysiloxane compns. contg. platinum-based catalysts for  
prodn. of)

IT Crosslinking catalysts  
Hydrosilylation catalysts  
(prodn. of curable polysiloxane compns. contg. platinum-based  
catalysts)

IT Polysiloxanes, properties  
RL: **POF (Polymer in formulation)**; PRP (Properties); TEM  
(Technical or engineered material use); USES (Uses)  
(prodn. of curable polysiloxane compns. contg. platinum-based  
catalysts)

IT 536-74-3, **Phenylacetylene** 12080-32-9, (1,5-  
Cyclooctadiene)platinum dichloride  
FL: RCT (Reactant); RACT (Reactant or reagent)  
(in prodn. of platinum-based catalysts for curable polysiloxane  
compns.)

IT 7440-06-4D, Platinum, complexes 107636-02-2, (1,5-  
Cyclooctadiene)bis(phenylethynyl)platinum  
RL: CAT (Catalyst use); USES (Uses)  
(prodn. of curable polysiloxane compns. contg. platinum-based  
catalysts)

IT 78-27-3, 1-Ethynyl-1-cyclohexanol  
FL: MOA (Modifier or additive use); USES (Uses)  
(prodn. of curable polysiloxane compns. contg. platinum-based  
catalysts)

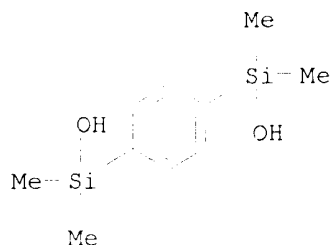
IT **35343-81-8D**, Dimethylsilanediol-1,4-bis(dimethylhydroxysilyl)benze  
ne copolymer, vinyl dimethylsilyl-terminated 156048-34-9D,  
Dimethylsilanediol-diphenylsilanediol copolymer, vinyl dimethylsilyl-  
terminated 156048-35-0D, Dimethylsilanediol-methylphenylsilanediol  
copolymer, vinyl dimethylsilyl-terminated 156118-35-3D,  
Dimethylsilanediol-methylsilanediol copolymer, trimethylsilyl-terminated  
168682-87-9D, vinyl dimethylsilyl-terminated  
RL: **POF (Polymer in formulation)**; PRP (Properties); TEM  
(Technical or engineered material use); USES (Uses)  
(prodn. of curable polysiloxane compns. contg. platinum-based  
catalysts)

IT **35343-81-8D**, Dimethylsilanediol-1,4-bis(dimethylhydroxysilyl)benze  
ne copolymer, vinyl dimethylsilyl-terminated  
RL: **POF (Polymer in formulation)**; PRP (Properties); TEM  
(Technical or engineered material use); USES (Uses)  
(prodn. of curable polysiloxane compns. contg. platinum-based  
catalysts)

RN 35343-81-8 HCAPLUS  
CN Silanediol, dimethyl-, polymer with 1,4-phenylenebis[dimethylsilanol]  
(9CI) (CA INDEX NAME)

CM 1

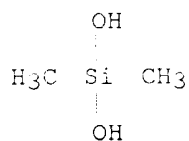
CRN 2754-32-7  
CMF C10 H18 O2 Si2



CM 2

CRN 1066-42-8

CMF C2 H8 O2 Si



L34 ANSWER 2 OF 34 HCAPLUS COPYRIGHT 2003 ACS

AN 2002:755130 HCAFLUS

DN 137:279922

TI Low-dielectric-constant interlayer insulating film composed of borazine-silicon-based polymer, and semiconductor device

IN Uchimaru, Yuko; Inoue, Masami

PA Japan

SO U.S. Pat. Appl. Publ., 8 pp.

CODEN: USXXCO

DT Patent

LA English

IC ICM H01L021-8238

NCL 438200000

CC 37-3 (**Plastics** Manufacture and Processing)Section cross-reference(s): **38**, 76

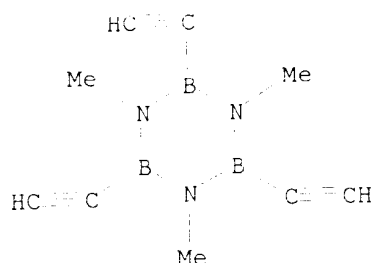
FAN.CNT 1

	PATENT NO.	KIND	DATE	APPLICATION NO.	DATE
PI	US 2002142533	A1	20021003	US 2002-93406	20020311
	JP 2002359240	A2	20021213	JP 2002-71333	20020315
PRAI	JP 2001-91460	A	20010327		

AB A low-dielec.-const. interlayer insulating film, which is composed of at least one selected from the group consisting of: (i) a low-dielec.-const. borazine-silicon-based polymer substance obtainable by reaction of, in the presence of a platinum catalyst, B,B',B''-triethynyl-N,N',N''-trimethylborazine with a specific silicon compd. having at least two hydrosilyl groups; and (ii) a low-dielec.-const. borazine-silicon-based polymer substance obtainable by reaction of, in the presence of a platinum catalyst, B,B',B''-triethynyl-N,N',N''-trimethylborazine with a specific cyclic silicon compd. having at least two hydrosilyl groups. A semiconductor device, which has the low-dielec.-const. interlayer

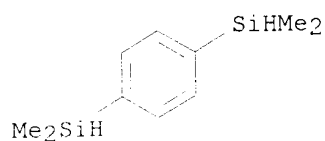
- insulating film. A low-refractive-index material, which is composed of the polymer substance (i) and/or (ii). Thus, hydrosilylation polymn. of B,B',B''-triethynyl-N,N',N''-trimethylborazine with p-bis(dimethylsilyl)benzene in ethylbenzene in the presence of Pt<sub>2</sub>(dvs)<sub>3</sub> [dvs = 1,3-divinyl(1,1,3,3-tetramethyl-1,3-disiloxane)] gave a copolymer in soln. which was coated on a wafer, and heated at 200.degree. for 1 h and at 300.degree. for 30 min to give a crosslinked film with a relative dielec. const. of 2.2-2.4, 5%-wt. loss temp. under N of 563.degree., and hardness 15 GPa.
- ST dielec interlayer insulating film low k borazine silicon polymer
- IT Polymerization  
(hydrosilylation; low-dielec.-const. interlayer insulating film composed of borazine-silicon-based polymer, and semiconductor device)
- IT Dielectric films  
Electric insulators  
Semiconductor devices  
(low-dielec.-const. interlayer insulating film composed of borazine-silicon-based polymer, and semiconductor device)
- IT Polycarbosilanes  
RL: **IMF (Industrial manufacture)**; PRP (Properties); TEM  
(Technical or engineered material use); **PREP (Preparation)**; USES  
(Uses)  
(polyacetylene-; low-dielec.-const. interlayer insulating film composed of borazine-silicon-based polymer, and semiconductor device)
- IT **Polyacetylenes**, preparation  
RL: **IMF (Industrial manufacture)**; PRP (Properties); TEM  
(Technical or engineered material use); **PREP (Preparation)**; USES  
(Uses)  
(polycarbosilane-; low-dielec.-const. interlayer insulating film composed of borazine-silicon-based polymer, and semiconductor device)
- IT 81032-58-8, Bis(1,3-divinyl-1,1,3,3-tetramethyldisiloxane)-platinum complex  
RL: CAT (Catalyst use); USES (Uses)  
(low-dielec.-const. interlayer insulating film composed of borazine-silicon-based polymer, and semiconductor device)
- IT **285141-52-8P**, p-Bis(dimethylsilyl)benzene-B,B',B''-triethynyl-N,N',N''-trimethylborazine copolymer 429664-38-0P, 1,3,5,7-Tetramethylcyclotetrasiloxane-B,B',B''-triethynyl-N,N',N''-trimethylborazine copolymer  
RL: **IMF (Industrial manufacture)**; PRP (Properties); TEM  
(Technical or engineered material use); **PREP (Preparation)**; USES  
(Uses)  
(low-dielec.-const. interlayer insulating film composed of borazine-silicon-based polymer, and semiconductor device)
- IT **285141-52-8P**, p-Bis(dimethylsilyl)benzene-B,B',B''-triethynyl-N,N',N''-trimethylborazine copolymer  
RL: **IMF (Industrial manufacture)**; PRP (Properties); TEM  
(Technical or engineered material use); **PREP (Preparation)**; USES  
(Uses)  
(low-dielec.-const. interlayer insulating film composed of borazine-silicon-based polymer, and semiconductor device)
- RN 285141-52-8 HCAPLUS
- CN Borazine, 2,4,6-triethynyl-1,3,5-trimethyl-, polymer with 1,4-phenylenebis(dimethylsilane) (9CI) (CA INDEX NAME)
- CM 1

CRN 285141-50-6  
CMF C9 H12 B3 N3



CM 2

CRN 2488-01-9  
CMF C10 H18 Si2



- L34 ANSWER 3 OF 34 HCAPLUS COPYRIGHT 2003 ACS  
AN 2002:149752 HCAPLUS  
DN 137:47530  
TT Synthesis and characterization of a silarylene-siloxane-  
**diacetylene** polymer and its conversion to a thermosetting plastic  
AU Homrighausen, Craig L.; Keller, Teddy M.  
CS Chemistry Division, Code 6127, Advanced Materials Section, Naval Research  
Laboratory, Washington, DC, 20375-5320, USA  
SO Polymer (2002), 43(9), 2619-2623  
CODEN: POLMAG; ISSN: 0032-3861  
PB Elsevier Science Ltd.  
DT Journal  
LA English  
CC 35-5 (Chemistry of Synthetic High **Polymers**)  
AB The synthesis and characterization of a linear silarylene-siloxane-  
**diacetylene** polymer and its conversion to a highly crosslinked  
thermoset are described. The linear polymer was prepd. via  
polycondensation of 1,4-bis(dimethylaminodimethylsilyl)butadiyne with  
1,4-bis(hydroxydimethylsilyl)benzene. Conversion to a thermoset occurs  
through the **diacetylene** groups above 300.degree.. The thermoset  
exhibited long-term thermooxidative stability up to 350.degree. in air as  
detd. by thermogravimetric anal.  
ST **polydiacetylene** polycarbosilane polysiloxane  
IT Polymerization  
(of bis(dimethylaminodimethylsilyl)butadiyne with  
bis(hydroxydimethylsilyl)benzene in synthesis of silarylene-siloxane-  
**diacetylene** polymer)  
IT Polysiloxanes, preparation

- RL: PRP (Properties); **SPN (Synthetic preparation); PREP (Preparation)**  
 (polycarbosilane-**polydiacetylene**-; synthesis and characterization of silarylene-siloxane-**diacetylene** polymer and its conversion to a thermosetting plastic)
- IT **Polydiacetylenes**  
 RL: PRP (Properties); **SPN (Synthetic preparation); PREP (Preparation)**  
 (polycarbosilane-polysiloxane-; synthesis and characterization of silarylene-siloxane-**diacetylene** polymer and its conversion to a thermosetting plastic)
- IT Polycarbosilanes  
 RL: PRP (Properties); **SPN (Synthetic preparation); PREP (Preparation)**  
 (polydiacetylene-polysiloxane-; synthesis and characterization of silarylene-siloxane-**diacetylene** polymer and its conversion to a thermosetting plastic)
- IT Thermal stability  
 (synthesis and characterization of silarylene-siloxane-**diacetylene** polymer and its conversion to a thermosetting plastic)
- IT 31098-29-0P, 1,4-Bis(dimethylaminodimethylsilyl)butadiyne  
 RL: RCT (Reactant); **SPN (Synthetic preparation); PREP (Preparation); RACT (Reactant or reagent)**  
 (monomer; for synthesis of silarylene-siloxane-**diacetylene** polymer and its conversion to a thermosetting plastic)
- IT 87-68-3, Hexachlorobutadiene 18209-60-4, Chlorodimethylaminodimethylsilane  
 RL: RCT (Reactant); **RACT (Reactant or reagent)**  
 (reactant; in synthesis of monomer for prepn. of silarylene-siloxane-**diacetylene** polymer and its conversion to a thermosetting plastic)
- IT **296762-58-8P**, 1,4-Bis(dimethylaminodimethylsilyl)butadiyne-1,4-bis(hydroxydimethylsilyl)benzene copolymer  
 RL: PRP (Properties); **SPN (Synthetic preparation); PREP (Preparation)**  
 (synthesis and characterization of silarylene-siloxane-**diacetylene** polymer and its conversion to a thermosetting plastic)

RE.CNT 23 THERE ARE 23 CITED REFERENCES AVAILABLE FOR THIS RECORD  
 RE

- (1) Brefort, J; Organometallics 1992, V11, P2500 HCAPLUS
- (2) Bucca, D; J Polym Sci, Polym Chem Ed 1999, V37, P4356 HCAPLUS
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 (22) Son, D; Macromolecules 1995, V28, P399 HCAPLUS  
 (23) Sundar, R; J Polym Sci, Polym Chem Ed 1997, V35, P2387 HCAPLUS

IT 296762-58-8P, 1,4-Bis(dimethylaminodimethylsilyl)butadiyne-1,4-bis(hydroxydimethylsilyl)benzene copolymer

FL: PFP (Properties); SPN (Synthetic preparation); PREP (Preparation)

(synthesis and characterization of silarylene-siloxane-diacetylene polymer and its conversion to a thermosetting plastic)

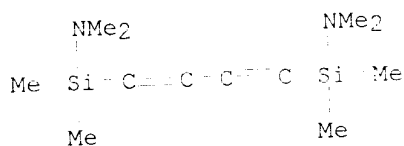
RN 296762-58-8 HCAPLUS

CN Silanol, 1,4-phenylenebis(dimethyl-, polymer with 1,1'-(1,3-butadiyne-1,4-diyl)bis[N,N,1,1-tetramethylsilanamine] (9CI) (CA INDEX NAME)

CM 1

CRN 31098-29-0

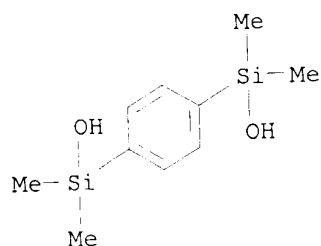
CMF C12 H24 N2 Si2



CM 2

CRN 2754-32-7

CMF C10 H18 O2 Si2



L34 ANSWER 4 OF 34 HCAPLUS COPYRIGHT 2003 ACS

AN 2002:63552 HCAPLUS

DN 136:118880

TI Thermally stable soluble silicon-containing step ladder polymers and their preparation

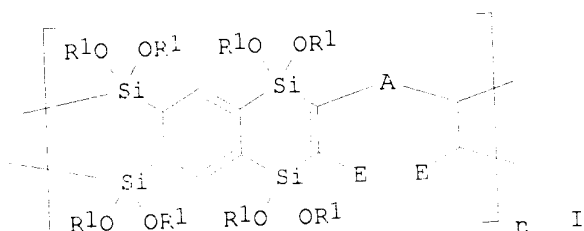
IN Hayashi, Teruyuki; Shimada, Shigeru; Kobayashi, Toshiaki; Uchimaru, Yuko; Tanaka, Masato

PA Sangyo Gijutsu Sogo Kenkyusho, Japan

KATHLEEN FULLER EIC 1700/PARKEE LAW 308-4290

SO Jpn. Kokai Tokkyo Koho, 9 pp.  
 CODEN: JKXXAF  
 DT Patent  
 LA Japanese  
 IC ICM C08G077-60  
 ICS C08G077-52; C09D183-16; C09D185-00; C09D183-14  
 CC 35-5 (Chemistry of Synthetic High Polymers)  
 FAN.CNT 1

	PATENT NO.	KIND	DATE	APPLICATION NO.	DATE
PI	JP 200020494	A2	20020123	JP 2000-207845	20000710
PRAI	JP 2000-207845		20000710		
GI					

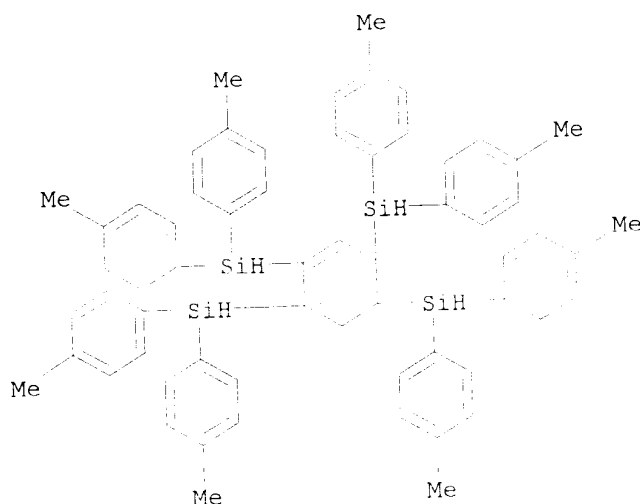


- AB The polymers I (R1 = alkyl, aryl, aralkyl; E = aryl, alkyl, trisubstituted silyl; A = divalent org. group, siloxane, organometallic group; n = av. d.p. 2-20,000) are claimed. Thus, 1,2,4,5-tetrakis[bis(neopentyloxy)silyl]benzene and 1,4-bis(phenylethynyl)benzene were polymd. in the presence of ethylenebis(triphenylphosphine)benzene to give a polymer showing 69% yield, Mw 23000, Mw/Mn 2.0, Td5 (5% wt. loss) 395.degree., and wt. retention on heating to 1000.degree. 36%.
- ST thermally stable soluble silicon ladder polymer
- IT Silylation  
 (double; prepn. of thermally stable sol. silicon-contg. step ladder polymers)
- IT Heat-resistant materials  
 (prepn. of thermally stable sol. silicon-contg. step ladder polymers)
- IT Ladder polymers  
 RL: IMF (Industrial manufacture); PRP (Properties); PREP (Preparation)  
 (prepn. of thermally stable sol. silicon-contg. step ladder polymers)
- IT Polymers, preparation  
 RL: IMF (Industrial manufacture); PRP (Properties); PREP (Preparation)  
 (silicon-contg.; prepn. of thermally stable sol. silicon-contg. step ladder polymers)
- IT 12120-15-9, Ethylenebis(triphenylphosphine) platinum  
 RL: CAT (Catalyst use); USES (Uses)  
 (polymn. catalyst; prepn. of thermally stable sol. silicon-contg. step ladder polymers)
- IT 391200-19-4P 391200-20-7P **391200-21-8P** 391200-22-9P  
 391200-23-0P 391200-24-1P  
 RL: IMF (Industrial manufacture); PRP (Properties); **PREP**  
 (Preparation)  
 (prepn. of thermally stable sol. silicon-contg. step ladder polymers)
- IT **391200-21-8P**  
 RL: IMF (Industrial manufacture); PRP (Properties); **PREP**  
 (Preparation)

(prepn. of thermally stable sol. silicon-contg. step ladder polymers)  
 RN 391200-21-8 HCAPLUS  
 CN Silane, 1,2,4,5-benzenetetrayltetrakis[bis(4-methylphenyl)-, polymer with  
 1,3-bis(phenylethynyl)benzene (9CI) (CA INDEX NAME)

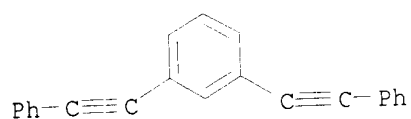
CM 1

CRN 325684-08-0  
 CMF C62 H62 Si4



CM 2

CRN 13141-36-1  
 CMF C22 H14



L34 ANSWER 5 OF 34 HCAPLUS COPYRIGHT 2003 ACS  
 AN 2002:5416 HCAPLUS  
 DN 136:247991  
 TI High-temperature elastomers from silarylene-siloxane-**diacetylene**  
 linear polymers  
 AU Homrighausen, Craig L.; Keller, Teddy M.  
 CS Advanced Materials Section, Chemistry Division, Naval Research Laboratory,  
 Washington, DC, 20375, USA  
 SO Journal of Polymer Science, Part A: Polymer Chemistry (2001), Volume Date  
 2002, 40(1), 88-94  
 CODEN: JPACEC; ISSN: 0887-624X  
 PB John Wiley & Sons, Inc.  
 DT Journal  
 LA English

KATHLEEN FULLER EIC 1700/PARKER LAW 308-4290

- CC 35-5 (Chemistry of Synthetic High **Polymers**)  
Section cross-reference(s): 39
- AB The syntheses and characterization of linear silarylene-siloxane-**diacetylene** polymers 3a-c and their thermal conversion to crosslinked elastomeric materials 4a-c are discussed. Inclusion of the **diacetylene** unit required synthesis of an appropriate monomeric species. 1,4-Bis(dimethylaminodimethylsilyl)butadiyne [(CH<sub>3</sub>)<sub>2</sub>N-Si(CH<sub>3</sub>)<sub>2</sub>-C.tplbond.C-C.tplbond.C-(CH<sub>3</sub>)<sub>2</sub> Si-N(CH<sub>3</sub>)<sub>2</sub>] 2 was prepd. from 1,4-dilithio-1,3-butadiyne and 2 equiv of dimethylaminodimethylchlorosilane. The linear polymers were prepd. via polycondensation of 2 with a series of disilanol **prepolymers**. The low mol. wt. silarylene-siloxane **prepolymers** 1a-c (terminated by hydroxyl groups) were synthesized via soln. condensation of an excess amt. of 1,4-bis(hydroxydimethylsilyl)benzene with bis(dimethylamino)dimethylsilane. The linear polymers were characterized by <sup>1</sup>H and <sup>13</sup>C NMR, Fourier transform IR spectroscopy, gel permeation chromatog., thermogravimetric anal. (TGA), and DSC. The elastomers exhibited long-term oxidative stability up to 330.degree. in air as detd. by TGA.
- ST silarylene siloxane **diacetylene** polymer prepn oxidative stability
- IT Rubber, preparation  
RL: PRP (Properties); **SPN (Synthetic preparation); PREP (Preparation)**  
(high-temp. elastomers from silarylene-siloxane-**diacetylene** linear polymers)
- IT Polysiloxanes, preparation  
RL: PRP (Properties); **SPN (Synthetic preparation); PREP (Preparation)**  
(**polydiacetylene**-, alternating; high-temp. elastomers from silarylene-siloxane-**diacetylene** linear polymers)
- IT **Polydiacetylenes**  
RL: PRP (Properties); **SPN (Synthetic preparation); PREP (Preparation)**  
(siloxane-, alternating; high-temp. elastomers from silarylene-siloxane-**diacetylene** linear polymers)
- IT Crosslinking  
(thermal; high-temp. elastomers from silarylene-siloxane-**diacetylene** linear polymers)
- IT Polymer degradation  
(thermooxidative; high-temp. elastomers from silarylene-siloxane-**diacetylene** linear polymers)
- IT 87-68-3, Hexachlorobutadiene **2754-32-7**, 1,4-Bis(hydroxydimethylsilyl)benzene 3768-58-9, Bis(dimethylamino)dimethylsilane 18209-60-4, N,N-Dimethylaminodimethylchlorosilane  
RL: RCT (Reactant); RACT (Reactant or reagent)  
(high-temp. elastomers from silarylene-siloxane-**diacetylene** linear polymers)
- IT 31098-29-0P, 1,4-Bis(dimethylaminodimethylsilyl)butadiyne 65864-08-6P, 1,4-Dilithio-1,3-butadiyne **296762-59-9P 296762-61-3P 296762-63-5P**  
RL: RCT (Reactant); **SPN (Synthetic preparation); PREP (Preparation); RACT (Reactant or reagent)**  
(high-temp. elastomers from silarylene-siloxane-**diacetylene** linear polymers)
- IT 109-72-8, n-Butyllithium, reactions  
RL: RGT (Reagent); RACT (Reactant or reagent)

(high-temp. elastomers from silarylene-siloxane-**diacetylene** linear polymers)

IT 296762-60-2P 296762-62-4P 296762-64-6P  
296762-65-7P 296762-66-8P 296762-67-9P

RL: PRP (Properties); SPN (Synthetic preparation); PREP  
(Preparation)

(option of further crosslinking; high-temp. elastomers from silarylene-siloxane-**diacetylene** linear polymers)

RE.CNT 21 THERE ARE 21 CITED REFERENCES AVAILABLE FOR THIS RECORD  
RE

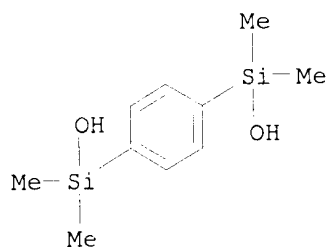
- (1) Anon; Silicon Based Polymer Science: A Comprehensive Resource 1990
- (2) Barensten, H; Macromolecules 1999, V32, P1753
- (3) Brefort, J; Organometallics 1992, V11, P2500 HCAPLUS
- (4) Burks, R; J Polym Sci Polym Chem Ed 1973, V11, P319 HCAPLUS
- (5) Corriu, R; J Polym Sci Part C 1990, V28, P431 HCAPLUS
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- (7) Dvornic, P; High Temperature Siloxane Elastomers 1990
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- (9) Dvornic, P; J Polym Sci Polym Chem Ed 1982, V20, P951 HCAPLUS
- (10) Ijadi-Magsooke, S; Macromolecules 1990, V23, P4485
- (11) Itoh, M; Macromolecules 1997, V30, P694 HCAPLUS
- (12) Jovanovic, J; Polym Degrad Stab 1998, V61, P87 HCAPLUS
- (13) Kendrick, T; the Silicon Heteroatom Bond 1991, P67 HCAPLUS
- (14) Lauter, U; Macromolecules 1999, V32, P3426 HCAPLUS
- (15) Lauter, U; Macromolecules 1999, V32, P3426 HCAPLUS
- (16) Love, B; J Org Chem 1999, V64, P3755 HCAPLUS
- (17) Nishihara, Y; Macromolecules 2000, V33, P2279
- (18) Oshita, J; Macromolecules 1999, V32, P5993
- (19) Silverstein, R; Spectrometric Identification of Organic Compounds 5th ed 1991
- (20) Son, D; J Polym Sci Part A 1995, V33, P2969 HCAPLUS
- (21) Zhang, R; Macromolecules 1997, V30, P2513 HCAPLUS

IT 2754-32-7, 1,4-Bis(hydroxydimethylsilyl)benzene  
RL: RCT (Reactant); RACT (Reactant or reagent)

(high-temp. elastomers from silarylene-siloxane-**diacetylene** linear polymers)

RN 2754-32-7 HCAPLUS

CN Silanol, 1,4-phenylenebis(dimethyl- (9CI) (CA INDEX NAME)



IT 296762-59-9P 296762-61-3P 296762-63-5P

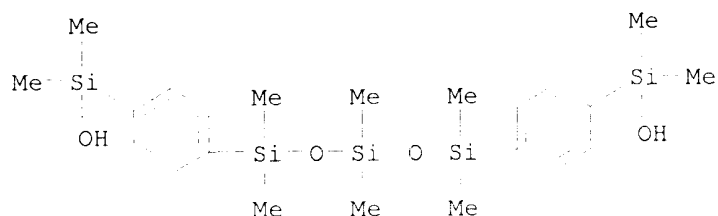
RL: RCT (Reactant); SPN (Synthetic preparation); PREP  
(Preparation); RACT (Reactant or reagent)

(high-temp. elastomers from silarylene-siloxane-**diacetylene** linear polymers)

RN 296762-59-9 HCAPLUS

CN Silanol, [(1,1,3,3,5,5-hexamethyl-1,5-trisiloxanediyl)di-4,1-

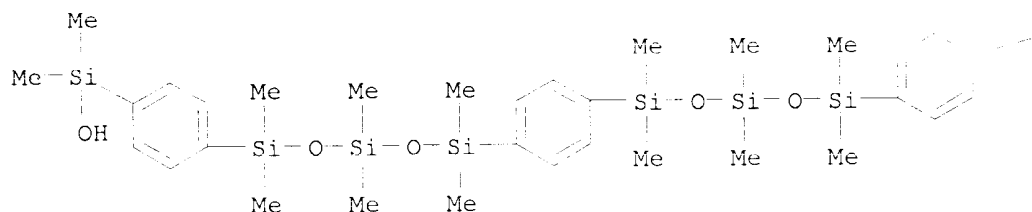
phenylene]bis[dimethyl- (9CI) (CA INDEX NAME)



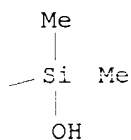
RN 296762-61-3 HCAPLUS

CN Silanol, [1,4-phenylenebis[(1,1,3,3,5,5-hexamethyl-5,1-trisiloxanediyl)-  
 4,1-phenylene]]bis[dimethyl- (9CI) (CA INDEX NAME)

PAGE 1-A



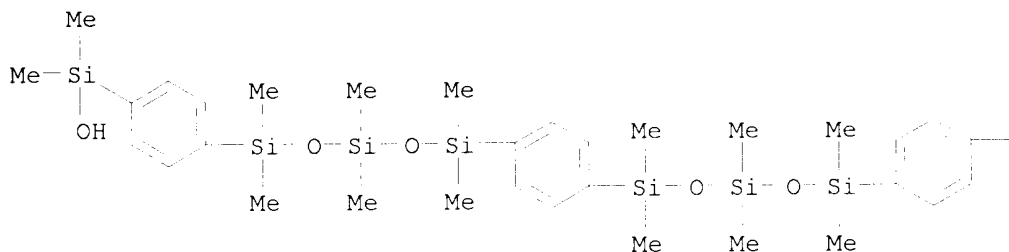
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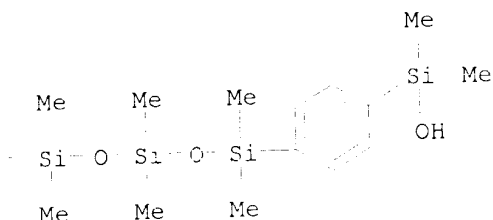
RN 296762-63-5 HCAPLUS

CN Silanol, [(1,1,3,3,5,5-hexamethyl-1,5-trisiloxanediyl)bis[4,1-phenylene[(1,1,3,3,5,5-hexamethyl-5,1-trisiloxanediyl)-4,1-phenylene]]bis(dimethyl- (9CI) (CA INDEX NAME)

PAGE 1-A



PAGE 1-B



IT 296762-60-2P 296762-62-4P 296762-64-6P  
 296762-65-7P 296762-66-8P 296762-67-9P  
 RL: PPP (Properties); SPN (Synthetic preparation); PREP  
 (Preparation)

(option of further crosslinking; high-temp. elastomers from  
 silarylene-siloxane-diacetylene linear polymers)

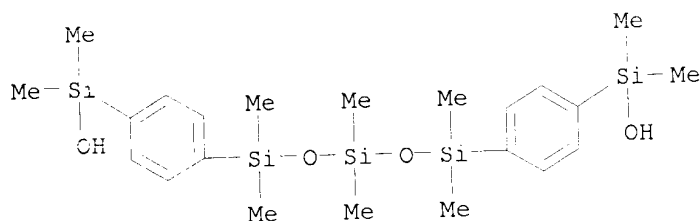
RN 296762-60-2 HCAPLUS

CN Silanol, [(1,1,3,3,5,5-hexamethyl-1,5-trisiloxanediyl)di-4,1-  
 phenylene]bis[dimethyl-, polymer with 1,1'-(1,3-butadiyne 1,4-  
 diyl)bis[N,N,1,1-tetramethylsilanamine] (9CI) (CA INDEX NAME)

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CRN 296762-59-9

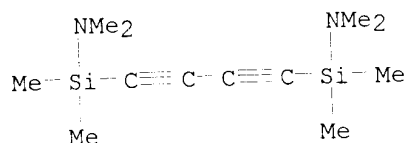
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CM 2

CRN 31098-29-0

CMF C12 H24 N2 Si2



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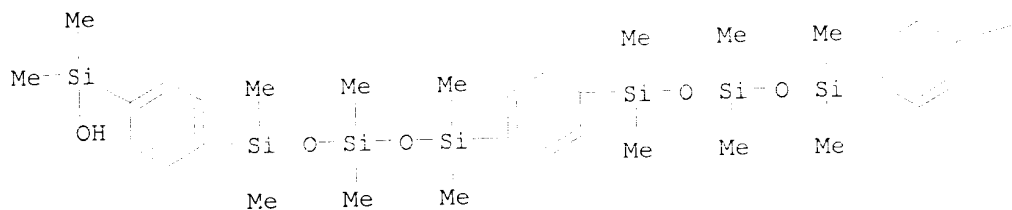
CN Silanol, [1,4-phenylenebis[(1,1,3,3,5,5-hexamethyl-5,1-trisiloxanediyl)-  
 4,1-phenylene]]bis[dimethyl-, polymer with 1,1'-(1,3-butadiyne-1,4-  
 diyl)bis[N,N,1,1-trimethylsilanamine] (9CI) (CA INDEX NAME)

CM 1

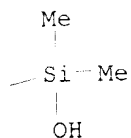
KATHLEEN FULLER EIC 1700/PARKER LAW 308-4290

CRN 296762-61-3  
CMF C34 H62 O6 Si8

PAGE 1-A

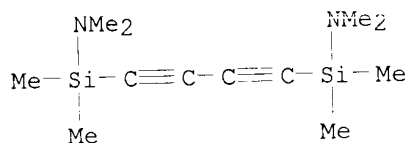


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CM 2

CRN 31098-29-0  
CMF C12 H24 N2 Si2



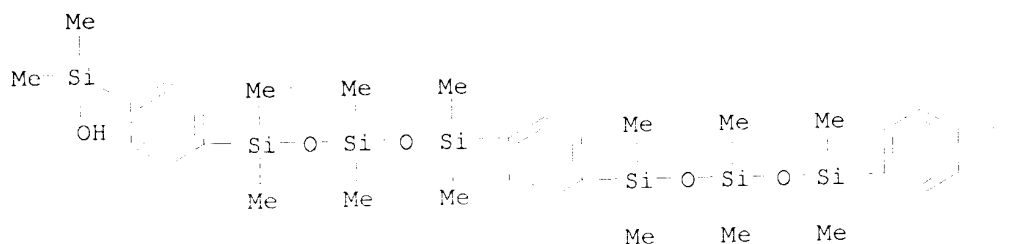
RN 296762-64-6 HCAPLUS  
CN Silanol, [(1,1,3,3,5,5-hexamethyl-1,5-trisiloxanediyl)bis[4,1-phenylene(1,1,3,3,5,5-hexamethyl-5,1-trisiloxanediyl)-4,1-phenylene]]bis[dimethyl-, polymer with 1,1'-(1,3-butadiyne-1,4-diyl)bis[N,N,1,1-tetramethylsilanamine] (9CI) (CA INDEX NAME)

CM 1

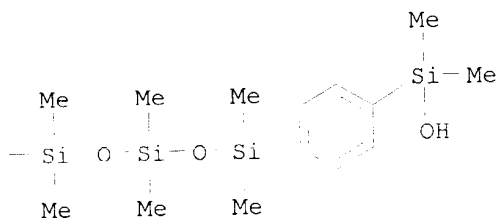
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CMF C46 H64 O8 Si11



PAGE 1-A



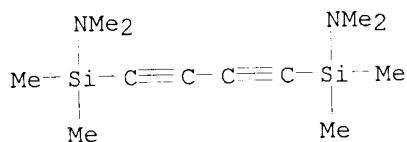
PAGE 1-B



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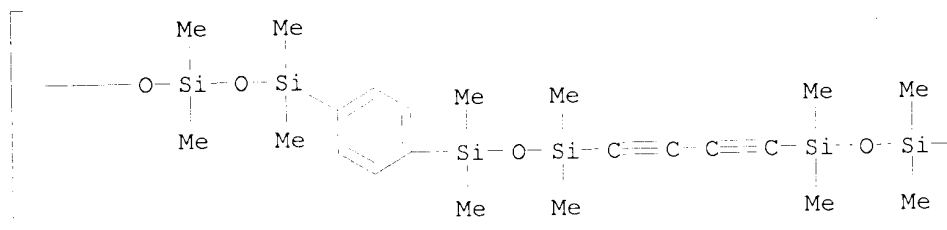
CMF C12 H24 N2 Si2



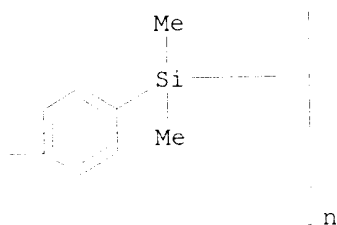
RN 296762-65-7 HCAPLUS

CN Poly[oxy(1,1,3,3-tetramethyl-1,3-disiloxanediyl)-1,4-phenylene(1,1,3,3-tetramethyl-1,3-disiloxanediyl)-1,3-butadiyne-1,4-diyl(1,1,3,3-tetramethyl-1,3-disiloxanediyl)-1,4-phenylene(dimethylsilylene)] (9CI) (CA INDEX NAME)

PAGE 1-A

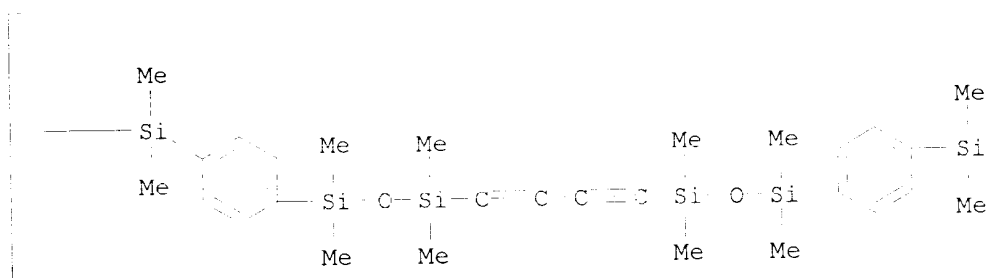


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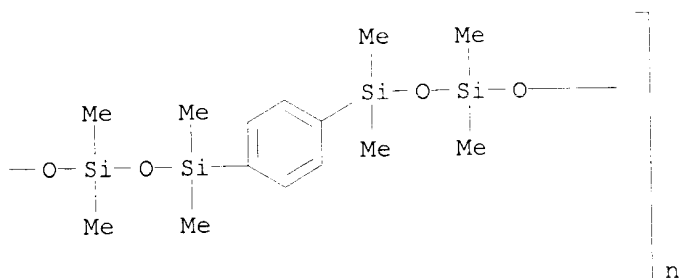


RN 296762-66-8 HCAPLUS  
 CN Poly[oxy(1,1,3,3-tetramethyl-1,3-disiloxanediyl)-1,4-phenylene(1,1,3,3,5,5-hexamethyl-1,5-trisiloxanediyl)-1,4-phenylene(1,1,3,3-tetramethyl-1,3-disiloxanediyl)-1,3-butadiyne-1,4-diyl(1,1,3,3-tetramethyl-1,3-disiloxanediyl)-1,4-phenylene(dimethylsilylene)] (9CI) (CA INDEX NAME)

PAGE 1-A

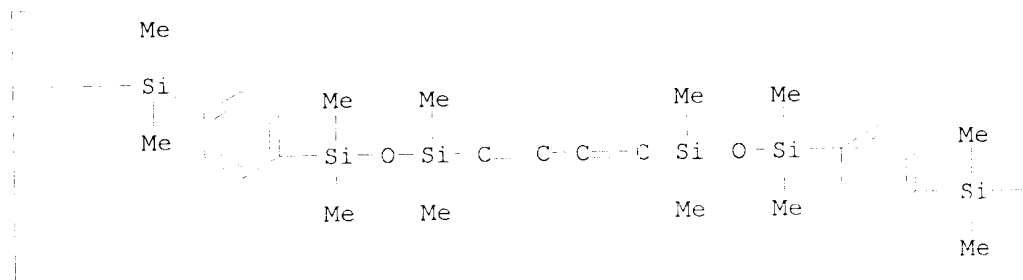


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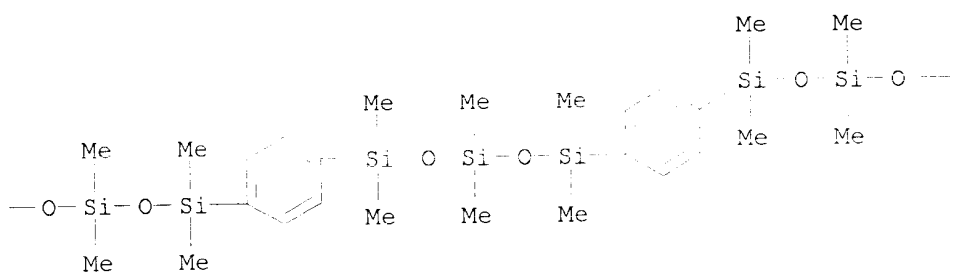


RN 296762-67-9 HCAPLUS  
 CN Poly[oxy(1,1,3,3-tetramethyl-1,3-disiloxanediyl)-1,4-phenylene(1,1,3,3,5,5-hexamethyl-1,5-trisiloxanediyl)-1,4-phenylene(1,1,3,3,5,5-hexamethyl-1,5-trisiloxanediyl)-1,4-phenylene(1,1,3,3-tetramethyl-1,3-disiloxanediyl)-1,3-butadiyne-1,4-diyl(1,1,3,3-tetramethyl-1,3-disiloxanediyl)-1,4-phenylene(dimethylsilylene)] (9CI) (CA INDEX NAME)

PAGE 1-A



PAGE 1-B



PAGE 1-C

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L34 ANSWER 6 OF 34 HCAPLUS COPYRIGHT 2003 ACS  
 AN 2001:332147 HCAPLUS  
 DN 134:311579  
 TI High temperature elastomers from linear poly(silarylene-siloxane-  
**acetylene**)  
 IN Keller, Teddy M.; Homrighausen, Craig  
 PA United States Dept. of the Navy, USA  
 SO U. S. Pat. Appl., 20 pp., Avail. NTIS Order No. PAT-APPL-9-625 271.  
 CODEN: XAXXAV  
 DT Patent  
 LA English  
 CC 35-6 (Chemistry of Synthetic High **Polymers**)  
 Section cross-reference(s): 39

KATHLEEN FULLER EIC 1700/PARKER LAW 308-4290

FAN.CNT	PATENT NO.	KIND	DATE	APPLICATION NO.	DATE
PI	US 625271	A0	20001204	US 2000-625271	20000725
	US 6362289	B1	20020326		
	WO 2002008315	A1	20020131	WO 2001-US23304	20010725
	W: AE, AG, AL, AM, AT, AU, AZ, BA, BB, BG, BR, BY, BZ, CA, CH, CN, CO, CR, CU, CZ, DE, DK, DM, DZ, EE, ES, FI, GB, GD, GE, GH, GM, HR, HU, ID, IL, IN, IS, JP, KE, KG, KP, KR, KZ, LC, LK, LR, LS, LT, LU, LV, MA, MD, MG, MK, MN, MW, MX, MZ, NO, NZ, PL, PT, RO, RU, SD, SE, SG, SI, SK, SL, TJ, TM, TR, UA, UG, UZ, VN, YU, ZA, ZW, AM, AZ, BY, KG, KZ, MD, RU, TJ, TM RW: GH, GM, KE, LS, MW, MZ, SD, SL, SS, TZ, UG, ZW, AT, BE, CH, CY, DE, DK, ES, FI, FF, GB, GR, IE, IT, LU, MC, NL, PT, SE, TR, BF, BJ, CF, CG, CI, CM, GA, GN, GQ, GW, ML, ME, NE, SN, TD, TG				
	US 2003045654	A1	20030306	US 2002-46296	20020116
PRAI	US 2000-625271	A	20000725		
AB	A linear polymer has repeating units represented by $[\text{SiR7R8}(\text{C.tplbond.C})\text{xSiR7R8OSiR1R2ArSiR3R4O}(\text{SiR5R6OSiR1R2ArSiR3R4O})\text{n}]$ wherein (a) n is .gtoreq.0, (b) x is .gtoreq.1, and (C.tplbond.C)x represents an unconjugated <b>acetylenic</b> group when x is equal to 1 or conjugated <b>acetylenic</b> groups when x is greater than 1; (c) Ar is an arom. group, and (c) R1, R2, R3, R4, R5, R6, R7 and R8 are independently selected from the group consisting of alkyl, aryl, alkylaryl, haloalkyl, haloaryl and mixts. thereof. The linear polymer may be thermally cured to form a crosslinked polymer.				
ST	<b>polyacetylene</b> polysilarylene siloxane heat resistance				
IT	Heat-resistant materials				
	(high temp. elastomers from linear poly(silarylene-siloxane- <b>acetylene</b> ))				
IT	Polysiloxanes, preparation				
	RL: IMF (Industrial manufacture); PRP (Properties); PREP (Preparation)				
	(polyacetylene-polycarbosilane-; high temp. elastomers from linear poly(silarylene-siloxane- <b>acetylene</b> ))				
IT	Polycarbosilanes				
	RL: IMF (Industrial manufacture); PRP (Properties); PREP (Preparation)				
	(polyacetylene-siloxane-; high temp. elastomers from linear poly(silarylene-siloxane- <b>acetylene</b> ))				
IT	Polyacetylenes, preparation				
	RL: IMF (Industrial manufacture); PRP (Properties); PREP (Preparation)				
	(polycarbosilane-siloxane-; high temp. elastomers from linear poly(silarylene-siloxane- <b>acetylene</b> ))				
IT	335126-50-6P 335126-53-9P				
	RL: IMF (Industrial manufacture); PRP (Properties); PREP (Preparation)				
	(high temp. elastomers from linear poly(silarylene-siloxane- <b>acetylene</b> ))				
IT	31098-29-0P, 1,4-Bis(Dimethylaminodimethylsilyl)butadiyne				
	34056-57-0P				
	RL: IMF (Industrial manufacture); RCT (Reactant); PREP (Preparation); RACT (Reactant or reagent)				
	(high temp. elastomers from linear poly(silarylene-siloxane- <b>acetylene</b> ))				
IT	87-68-3, Hexachlorobutadiene 18209-60-4				
	RL: RCT (Reactant); RACT (Reactant or reagent)				

(high temp. elastomers from linear poly(silarylene-siloxane-  
acetylene))

IT 335126-53-9P

RL: IMF (Industrial manufacture); PRP (Properties); PREP

(Preparation)

(high temp. elastomers from linear poly(silarylene-siloxane  
acetylene))

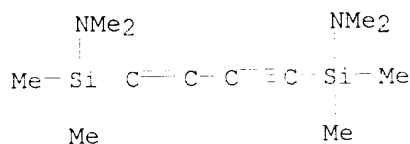
RN 335126-53-9 HCAPLUS

CN Silanol, 1,4-phenylenebis(dimethyl-, polymer with 1,1'-(1,3-butadiyne-1,4-  
diyl)bis[N,N,1,1-tetramethylsilanamine] and hexamethylsilanediamine (9CI)  
(CA INDEX NAME)

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CRN 31098-29-0

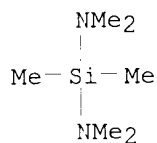
CMF C12 H24 N2 Si2



CM 2

CRN 3768-58-9

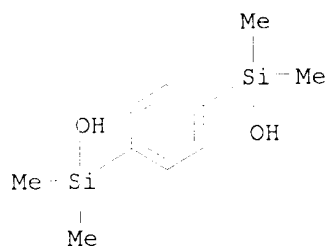
CMF C6 H18 N2 Si



CM 3

CRN 2754-32-7

CMF C10 H18 O2 Si2



IT 34056-57-0P

RL: IMF (Industrial manufacture); RCT (Reactant); PREP  
 (Preparation); RACT (Reactant or reagent)  
 (high temp. elastomers from linear poly(silarylene-siloxane-  
 acetylene))

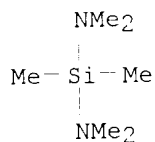
RN 34056-57-0 HCAPLUS

CN Silanol, 1,4-phenylenebis(dimethyl-, polymer with hexamethylsilanedi-  
 amine (9CI) (CA INDEX NAME)

CM 1

CRN 3768-58-9

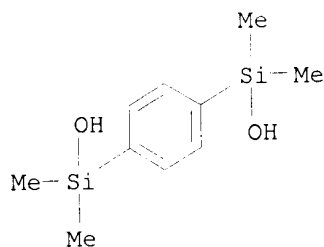
CMF C6 H18 N2 Si



CM 2

CRN 2754-32-7

CMF C10 H18 O2 Si2



L34 ANSWER 7 OF 34 HCAPLUS COPYRIGHT 2003 ACS

AN 2000:565957 HCAPLUS

DN 133:267392

TI Silarylene-siloxane-**diacetylene** polymers as precursors to high  
 temperature elastomers

AU Homrighausen, Craig L.; Keller, Teddy M.

CS Chemistry Materials Branch, Naval Research Laboratory, Washington, DC,  
 20375-5320, USA

SO Polymeric Materials Science and Engineering (2000), 83, 8-9

CODEN: PMSEDG; ISSN: 0743-0515

PB American Chemical Society

DT Journal

LA English

CC 37-3 (**Plastics** Manufacture and Processing)

Section cross-reference(s): 39

AB A series of silarylene-siloxane-**diacetylene** polymers with  
 different **diacetylene** content was prepd. by an adapted version  
 of the aminosilane-deficient method. Some cleavage of the polymers

occurred at the alkynyl carbon-silicon bond via dimethylamine reaction. This cleavage reaction would disrupt the alternating nature of the polymer structure as well as hinder the prodn. of truly high-mol.-wt. polymers. DSC showed that crosslinking occurred .apprx.200.degree. for primary **diacetylene** groups and above 300.degree. for internal **diacetylene** units. The crosslinked polymers degrade thermally above 425.degree.. As the crosslink d. increases, both the onset temp. of major degrdn. and the char yield at 1000.degree. shift to higher values.

ST silarylene siloxane **diacetylene** polymer precursor elastomer

IT Polysiloxanes, preparation

Polysiloxanes, preparation

Polysiloxanes, preparation

RL: **SPN (Synthetic preparation); PREP (Preparation)**

(polycarbosilane-polydiacetylene-; prepn. of

silarylene-siloxane-diacetylene polymers as precursors to high temp. elastomers)

IT **Polydiacetylenes**

**Polydiacetylenes**

**Polydiacetylenes**

RL: **SPN (Synthetic preparation); PREP (Preparation)**

(polycarbosilane-polysiloxane-; prepn. of silarylene-siloxane-

**diacetylene** polymers as precursors to high temp. elastomers)

IT Polycarbosilanes

Polycarbosilanes

Polycarbosilanes

RL: **SPN (Synthetic preparation); PREP (Preparation)**

(polydiacetylene-polysiloxane-; prepn. of

silarylene-siloxane-diacetylene polymers as precursors to high temp. elastomers)

IT 31098-29-0P, 1,4-Bis(dimethylaminodimethylsilyl)butadiyne

RL: **RCT (Reactant); SPN (Synthetic preparation); PREP**

**(Preparation); RACT (Reactant or reagent)**

(prepn. and polymn.)

IT 296762-58-8P 296762-60-2P 296762-62-4P

296762-64-6P 296762-65-7P 296762-66-8P

296762-67-9P 296763-38-7P

RL: **SPN (Synthetic preparation); PREP (Preparation)**

(prepn. of silarylene-siloxane-diacetylene polymers as precursors to high temp. elastomers)

IT 2754-32-7, 1,4-Bis(hydroxydimethylsilyl)benzene

RL: **RCT (Reactant); RACT (Reactant or reagent)**

(reaction with bis(dimethylamino)dimethylsilane)

IT 3768-58-9, Bis(dimethylamino)dimethylsilane

RL: **RCT (Reactant); RACT (Reactant or reagent)**

(reaction with bis(hydroxydimethylsilyl)benzene)

IT 87-68-3, Hexachlorobutadiene

RL: **RCT (Reactant); RACT (Reactant or reagent)**

(reaction with dimethylaminodimethylchlorosilane)

IT 18209-60-4, N,N-Dimethylaminodimethylchlorosilane

RL: **RCT (Reactant); RACT (Reactant or reagent)**

(reaction with hexachlorobutadiene)

PE.CNT 9 THERE ARE 9 CITED REFERENCES AVAILABLE FOR THIS RECORD

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IT 296762-58-8P 296762-60-2P 296762-62-4P  
 296762-64-6P 296762-65-7P 296762-66-8P  
 296762-67-9P 296763-38-7P

RL: SPN (Synthetic preparation); PREP (Preparation)  
 (prepn. of silarylene-siloxane-diacetylene polymers as  
 precursors to high temp. elastomers)

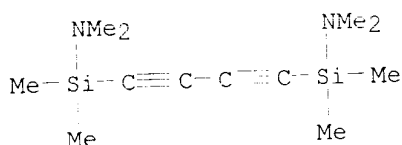
RN 296762-58-8 HCAPLUS

CN Silanol, 1,4-phenylenebis[dimethyl-, polymer with 1,1'-(1,3-butadiyne-1,4-  
 diyl)bis[N,N,1,1-tetramethylsilanamine] (9CI) (CA INDEX NAME)

CM 1

CRN 31098-29-0

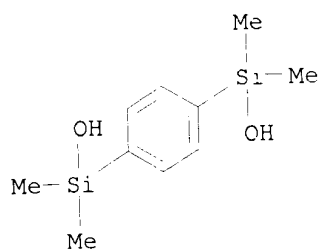
CMF C12 H24 N2 Si2



CM 2

CRN 2754-32-7

CMF C10 H18 O2 Si2



RN 296762-60-2 HCAPLUS

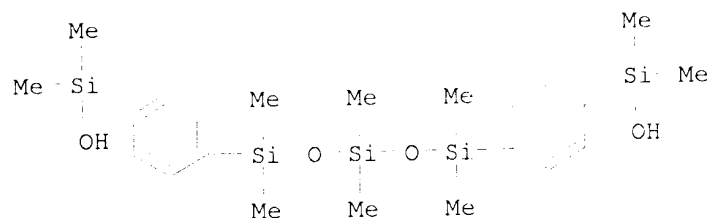
CN Silanol, [(1,1,3,3,5,5-hexamethyl-1,5-trisiloxanediyl)di-4,1-  
 phenylene]bis[dimethyl-, polymer with 1,1'-(1,3-butadiyne-1,4-  
 diyl)bis[N,N,1,1-tetramethylsilanamine] (9CI) (CA INDEX NAME)

CM 1

CRN 296762-59-9

CMF C22 H40 O4 Si5

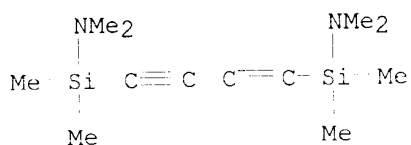




CM 2

CRN 31098-29-0

CMF C12 H24 N2 Si2



RN 296762-62-4 HCAPLUS

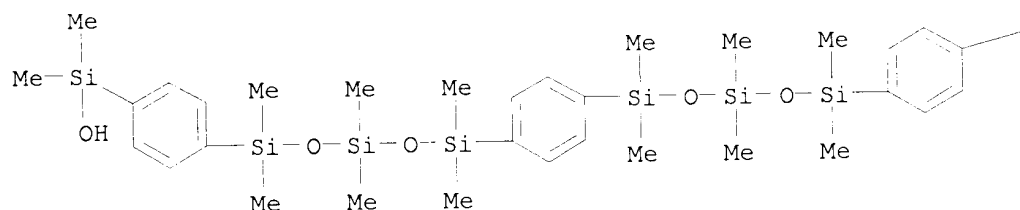
CN Silanol, [1,4-phenylene]bis[(1,1,3,3,5,5-hexamethyl-5,1-trisiloxanediyl)-4,1-phenylene]bis[dimethyl-, polymer with 1,1'-(1,3-butadiyne-1,4-diyl)bis[N,N,1,1-trimethylsilanamine] (9CI) (CA INDEX NAME)

CM 1

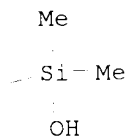
CRN 296762-61-3

CMF C34 H62 O6 Si8

PAGE 1-A



PAGE 1-B



CM 2

CRN 31098-29-0

CMF C12 H24 N2 Si2



RN 296762-64-6 HCAPLUS

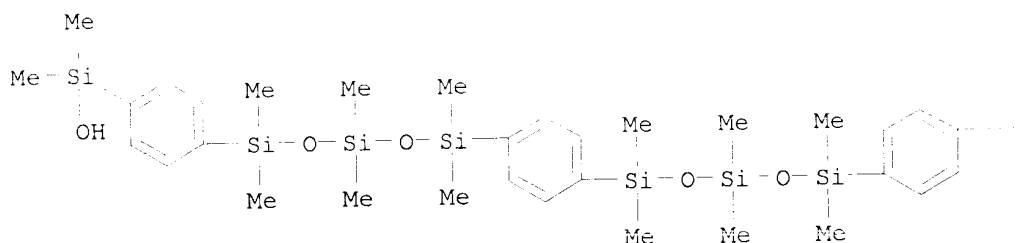
CN Silanol, [(1,1,3,3,5,5-hexamethyl-1,5-trisiloxanediyl)bis(4,1-phenylene(1,1,3,3,5,5-hexamethyl-5,1-trisiloxanediyl)-4,1-phenylene]]bis(dimethyl-, polymer with 1,1'-(1,3-butadiyne-1,4-diyl)bis[N,N,1,1-tetramethylsilanamine] (9CI) (CA INDEX NAME)

CM 1

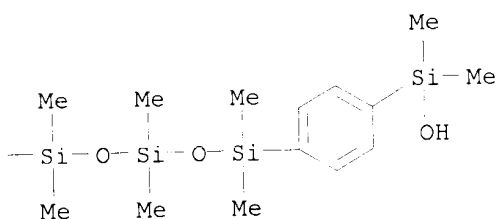
CRN 296762-63-5

CMF C46 H84 C8 Si11

PAGE 1-A



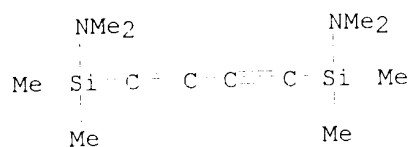
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CM 2

CRN 31098-29-0

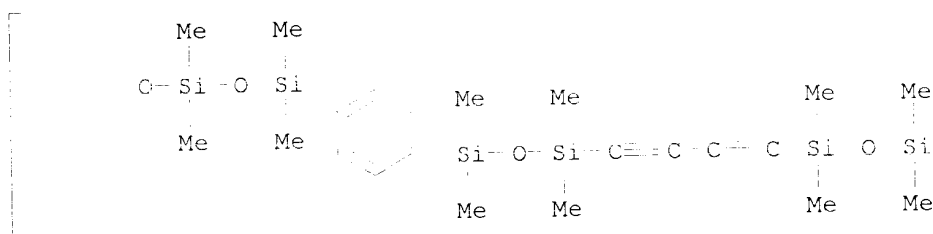
CMF C12 H24 N2 Si2



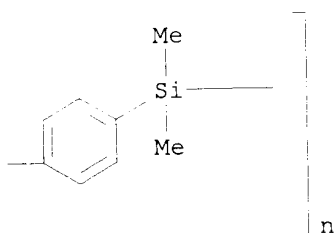
RN 296762-65-7 HCAPLUS

CN Poly[oxy(1,1,3,3-tetramethyl-1,3-disiloxanediyl)-1,4-phenylene(1,1,3,3-tetramethyl-1,3-disiloxanediyl)-1,3-butadiyne-1,4-diyl(1,1,3,3-tetramethyl-1,3-disiloxanediyl)-1,4-phenylene(dimethylsilylene)] (9CI) (CA INDEX NAME)

PAGE 1-A



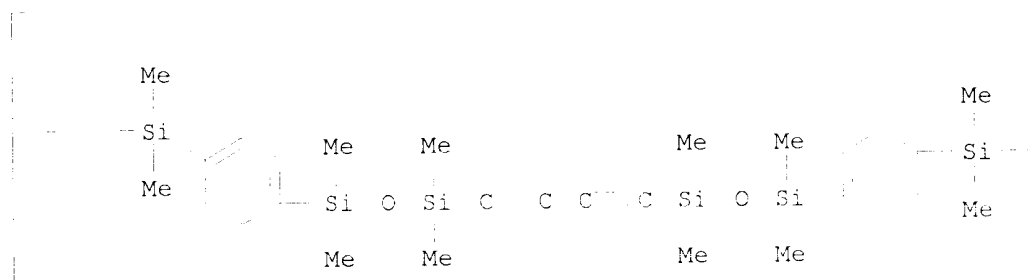
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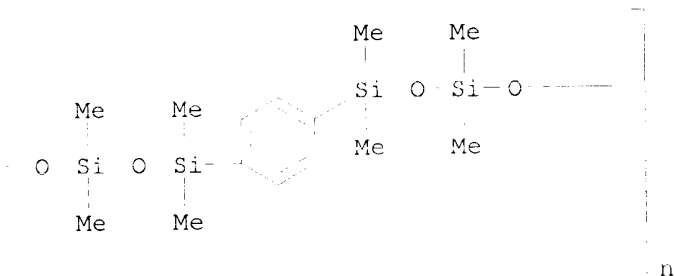
RN 296762-66-8 HCAPLUS

CN Poly[oxy(1,1,3,3-tetramethyl-1,3-disiloxanediyl)-1,4-phenylene(1,1,3,3,5,5-hexamethyl-1,5-trisiloxanediyl)-1,4-phenylene(1,1,3,3-tetramethyl-1,3-disiloxanediyl)-1,3-butadiyne-1,4-diyl(1,1,3,3-tetramethyl-1,3-disiloxanediyl)-1,4-phenylene(dimethylsilylene)] (9CI) (CA INDEX NAME)

PAGE 1-A

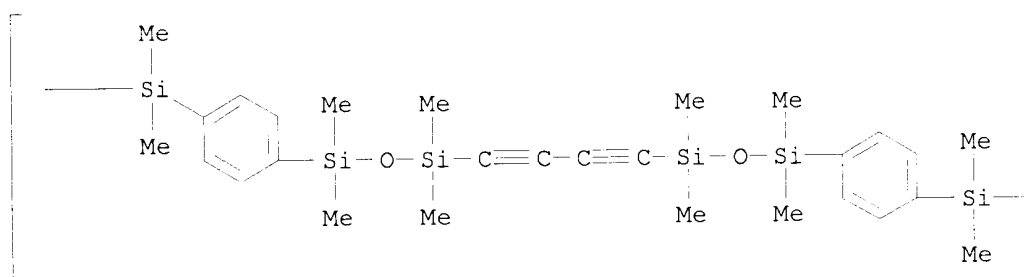


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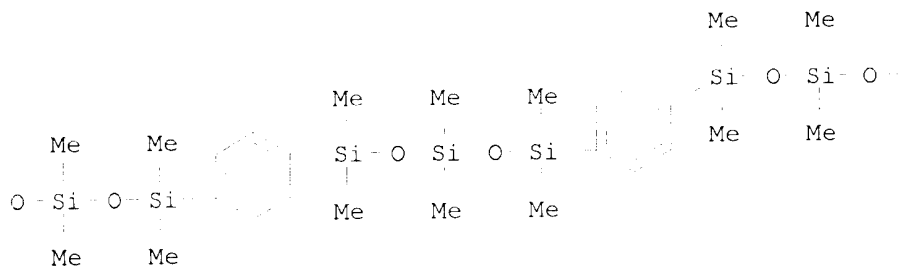


RN 296762-67-9 HCAPLUS  
 CN Poly[oxy(1,1,3,3-tetramethyl-1,3-disiloxanediyl)-1,4-phenylene(1,1,3,3,5,5-hexamethyl-1,5-trisiloxanediyl)-1,4-phenylene(1,1,3,3,5,5-hexamethyl-1,5-trisiloxanediyl)-1,4-phenylene(1,1,3,3-tetramethyl-1,3-disiloxanediyl)-1,3-butadiyne-1,4-diyl(1,1,3,3-tetramethyl-1,3-disiloxanediyl)-1,4-phenylene(dimethylsilylene)] (9CI) (CA INDEX NAME)

PAGE 1-A



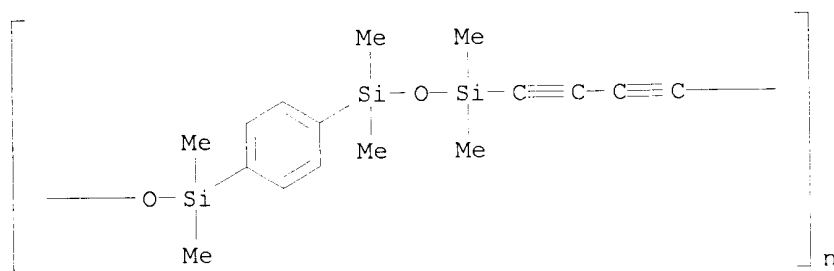
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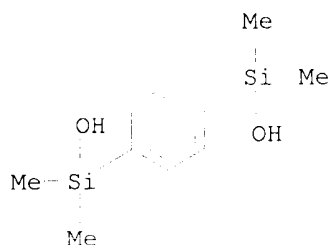
PAGE 1-C

[  
n

RN 296763-38-7 HCAPLUS  
 CN Poly[oxy(dimethylsilylene)-1,4-phenylene(1,1,3,3-tetramethyl-1,3-disiloxanediyl)-1,3-butadiyne-1,4-diyl] (9CI) (CA INDEX NAME)



IT **2754-32-7**, 1,4-Bis(hydroxydimethylsilyl)benzene  
 RL: RCT (Reactant); RACT (Reactant or reagent)  
 (reaction with bis(dimethylamino)dimethylsilane)  
 RN 2754-32-7 HCAPLUS  
 CN Silanol, 1,4-phenylenebis(dimethyl- (9CI) (CA INDEX NAME)



- L34 ANSWER 8 OF 34 HCAPLUS COPYRIGHT 2003 ACS  
 AN 2000:66168 HCAPLUS  
 DN 132:208238  
 TI Regio- and Stereocontrolled Hydrosilylation Polyaddition Catalyzed by RhI(PPh<sub>3</sub>)<sub>3</sub>. Syntheses of Polymers Containing (E)- or (Z)-Alkenylsilane Moieties  
 AU Mori, Atsunori; Takahisa, Eisuke; Kajiro, Hiroshi; Nishihara, Yasushi; Hiyama, Tamejiro  
 CS Research Laboratory of Resources Utilization, Tokyo Institute of Technology, Nagatsuta Yokohama, 226-8503, Japan  
 SO Macromolecules (2000), 33(4), 1115-1116  
 CODEN: MAMOBX; ISSN: 0024-9297  
 PB American Chemical Society  
 DT Journal  
 LA English  
 CC 35-7 (Chemistry of Synthetic High Polymers)  
 AB Bis(dimethylsilyl)benzene monomers and model compds. were synthesized. Stereodivergent syntheses of E- and Z-polymers with alkenylsilane moiety were conducted by hydrosilylation polyaddn. using diethynylbenzene and bis(dimethylsilyl)benzene catalyzed by RhI(PPh<sub>3</sub>)<sub>3</sub>. The E/Z ratios of the polymers (and 2 model monomers) were detd. and all products were fully characterized by spectroscopic methods. This synthetic pathway is a strong tool to study the relationship of polymer properties with the stereochem. of vinylene moieties.  
 ST diethynylbenzene dimethylsilylbenzene hydrosilylation polyaddn stereochem; alkenylsilane moiety cis trans polymer synthesis; methylsilylbenzene monomer prepn hydrosilylation polyaddn diethynylbenzene; polyarylenealkenylene polycarbosilane cis trans hydrosilylation polyaddn  
 IT Polycarbosilanes  
 Polycarbosilanes  
 RL: PRP (Properties); SPN (Synthetic preparation); PREP (Preparation) (polyarylenealkenylene-; stereodivergent syntheses of E- and Z-polyarylenealkenylenes with alkenylsilane moiety by hydrosilylation polyaddn.)  
 IT Poly(arylenealkenylenes)  
 Poly(arylenealkenylenes)  
 RL: PRP (Properties); SPN (Synthetic preparation); PREP (Preparation) (polycarbosilane-; stereodivergent syntheses of E- and Z-polyarylenealkenylenes with alkenylsilane moiety by hydrosilylation polyaddn.)  
 IT Hydrosilylation catalysts  
 (prepn. and polymn. of (dimethylsilyl)benzene-based monomers)  
 IT Monomers  
 RL: RCT (Reactant); SPN (Synthetic preparation); PREP (Preparation); RACT (Reactant or reagent)

- (prepn. and polymn. of (dimethylsilyl)benzene-based monomers)
- IT Polymer chains  
(stereodivergent syntheses of E- and Z-polyarylenealkenylenes with alkenylsilane moiety by hydrosilylation polyaddn.)
- IT 260365-75-1P 260365-76-2P  
RL: SPN (Synthetic preparation); PREP (Preparation)  
(model compd.; prepn. and polymn. of (dimethylsilyl)benzene-based monomers)
- IT 13315-16-7P, 1,3-Bis(dimethylsilyl)benzene 260365-73-9P 260365-74-0P  
RL: FCT (Reactant); SPN (Synthetic preparation); PREP (Preparation); RACT (Reactant or reagent)  
(monomer; prepn. and polymn. of (dimethylsilyl)benzene-based monomers)
- IT 14973-90-1, Iodotris(triphenylphosphine)rhodium  
RL: CAT (Catalyst use); USES (Uses)  
(prepn. and polymn. of (dimethylsilyl)benzene-based monomers)
- IT 108-36-1, 1,3-Dibromobenzene 536-74-3, Phenylethyne 766-77-8,  
Dimethylphenylsilane 935-14-8, 1,4-Diethynylbenzene 1066-35-9,  
Chlorodimethylsilane 2488-01-9, 1,4-Bis(dimethylsilyl)benzene  
RL: RCT (Reactant); RACT (Reactant or reagent)  
(prepn. and polymn. of (dimethylsilyl)benzene-based monomers)
- IT **260365-77-3P** 260365-78-4P 260365-79-5P 260365-80-6P  
260365-81-9P 260365-82-0P **260365-83-1P** 260365-84-2P  
260365-85-3P 260365-86-4P 260365-87-5P 260365-88-6P  
RL: FRP (Properties); SPN (Synthetic preparation); PREP (Preparation)  
(stereodivergent syntheses of E- and Z-polyarylenealkenylenes with alkenylsilane moiety by hydrosilylation polyaddn.)

RE.CNT 35 THERE ARE 35 CITED REFERENCES AVAILABLE FOR THIS RECORD  
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IT 260365-77-3P 260365-83-1P

RL: PPP (Properties); SPN (Synthetic preparation); PREP

(Preparation)

(stereodivergent syntheses of E- and Z-polyarylenealkenylenes with alkenylsilane moiety by hydrosilylation polyaddn.)

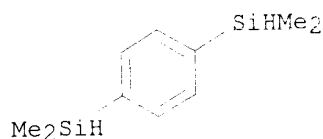
RN 260365-77-3 HCAPLUS

CN Silane, 1,4-phenylenebis[dimethyl-, polymer with 1,4-diethynylbenzene (9CI) (CA INDEX NAME)

CM 1

CRN 2488-01-9

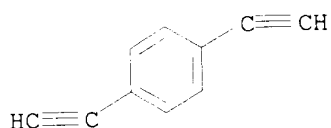
CMF C10 H18 Si2



CM 2

CRN 935-14-8

CMF C10 H6



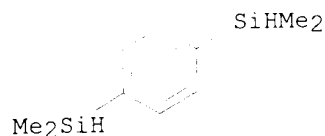
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CN Silane, 1,4-phenylenebis[dimethyl-, polymer with 1,3-diethynylbenzene (9CI) (CA INDEX NAME)

CM 1

CRN 2488-01-9

CMF C10 H18 Si2





CM 2

CRN 1785-61-1

CMF C10 H6

HC  $\equiv$  C  $\equiv$  C  $\equiv$  CH

L34 ANSWER 9 OF 34 HCAPLUS COPYRIGHT 2003 ACS

AN 1998:69403 HCAPLUS

DN 128:115330

TI Efficient Zirconocene-Coupling of Silicon-Substituted Diynes to Polymers and Macrocycles

AU Mao, Shane S. H.; Liu, Feng-Quan; Tilley, T. Don

CS Department of Chemistry, University of California, Berkeley, CA, 94720-1460, USA

SO Journal of the American Chemical Society (1998), 120(6), 1193-1206

CODEN: JACSAT; ISSN: 0002-7863

PB American Chemical Society

DT Journal

LA English

CC 35-7 (Chemistry of Synthetic High Polymers)

Section cross-reference(s): 78

AB The zirconocene-coupling of diynes with internal silicon substituents,  $\text{MeC.tplbond.CMe}_2\text{SiArSiMe}_2\text{C.tplbond.CMe}$  ( $\text{Ar} = 1,4\text{-C}_6\text{H}_4$ ;  $1,3\text{-C}_6\text{H}_4$ ;  $\text{Ar} = 4,4'\text{-C}_6\text{H}_4\text{C}_6\text{H}_4$ ), generates regiospecific polymers contg. zirconacyclopentadiene in the main chain. These organometallic polymers hydrolyze cleanly to butadienediyl polymers of the type  $[\text{Me}_2\text{SiArSiMe}_2\text{CH:CMeCMe:CH}]_n$  and other polymer reacts with iodine to give the iodine-contg. polymer  $[1,4\text{-Me}_2\text{SiC}_6\text{H}_4\text{SiMe}_2\text{C(I):CMeCMe:C(I)}]_n$ . The organometallic polymers undergo facile and high-yield degrdms. to macrocycles under mild conditions (refluxing THF soln.). The size and shape of the resulting macrocycles depend upon the nature of the diyne spacer group. Thus, polymers contg. parallel diyne units convert to the trimeric macrocycles  $[\text{Me}_2\text{SiArSiMe}_2\text{C}_4\text{Me}_2\text{ZrCp}_2]_3$  ( $\text{Ar} = 1,4\text{-C}_6\text{H}_4$ ;  $\text{Ar} = 4,4'\text{-C}_6\text{H}_4\text{C}_6\text{H}_4$ ), while other polymers gives the dimeric macrocycle  $[1,3\text{-Me}_2\text{SiC}_6\text{H}_4\text{SiMe}_2\text{C}_4\text{Me}_2\text{ZrCp}_2]_2$ . The dimeric macrocycle  $[\text{Me}_2\text{SiC}_6\text{H}_4\text{SiMe}_2\text{C}_6\text{H}_4\text{SiMe}_2\text{C}_4\text{Me}_2\text{ZrCp}_2]_2$  was obtained directly from the zirconocene coupling of  $\text{Me}_2\text{Si}[(1,4\text{-C}_6\text{H}_4)\text{SiMe}_2(\text{C.tplbond.CMe})]_2$  by heating the reaction mixt. to reflux. In a similar manner, the diyne  $\text{Me}_2\text{Si}(\text{C.tplbond.CMe})_2$  was converted in high yield to the hexameric macrocycle  $[\text{Me}_2\text{SiC}_4\text{Me}_2\text{ZrCp}_2]_6$ . The macrocycles,  $[1,4\text{-Me}_2\text{SiC}_6\text{H}_4\text{SiMe}_2\text{C}_4\text{Me}_2\text{H}_2]_3$  and others were characterized by single-crystal X-ray crystallog. Mols. of one of the macrocycles adopt a nearly planar C3 macrocyclic structure with a cavity described by an av. transannular  $\text{Si.cntdot..cntdot..cntdot.Si}$  distance of 13.2 .ANG., while the other hydrolyzed macrocycle has a chair conformation. This conformation change results from conversion of cis diene groups in the zirconacyclopentadiene fragments to trans diene groups in. The high-yield formation of macrocycles apparently results from the reversible nature of the alkyne-coupling reaction, which allows for a low-energy pathway to the smallest macrocycle possessing minimal ring strain.

- ST zirconocene coupling silicon substituted diyne; polymeric zirconocene silicon substituted diyne
- IT Bond angle  
(carbon-carbon-carbon; efficient zirconocene-coupling of silicon-substituted diynes to polymers and macrocycles)
- IT Bond angle  
(carbon-silicon-carbon; efficient zirconocene-coupling of silicon-substituted diynes to polymers and macrocycles)
- IT Bond angle  
(carbon-zirconium-carbon; efficient zirconocene-coupling of silicon-substituted diynes to polymers and macrocycles)
- IT Bond length  
(carbon-zirconium; efficient zirconocene-coupling of silicon-substituted diynes to polymers and macrocycles)
- IT Polymer chains  
(conformation; efficient zirconocene-coupling of silicon-substituted diynes to polymers and macrocycles)
- IT Crystal structure  
Polymerization  
(efficient zirconocene-coupling of silicon-substituted diynes to polymers and macrocycles)
- IT Macrocyclic compounds  
RL: PRP (Properties); **SPN (Synthetic preparation); PREP (Preparation)**  
(efficient zirconocene-coupling of silicon-substituted diynes to polymers and macrocycles)
- IT Polysilanes  
Polysilanes  
RL: PRP (Properties); **SPN (Synthetic preparation); PREP (Preparation)**  
(polyacetylene-; efficient zirconocene-coupling of silicon-substituted diynes to polymers and macrocycles)
- IT **Polyacetylenes, preparation**  
**Polyacetylenes, preparation**  
RL: PRP (Properties); **SPN (Synthetic preparation); PREP (Preparation)**  
(polysilane-; efficient zirconocene-coupling of silicon-substituted diynes to polymers and macrocycles)
- IT 201603-74-9P 201603-75-0P 201603-76-1P 201603-77-2P 201603-78-3P  
201603-79-4P 201603-80-7P 201603-81-8P 201603-82-9P 201603-83-0P  
201658-51-7P 201658-52-8P 201658-54-0P 201658-59-5P 201658-62-0P  
201658-65-3P 201658-68-6P 201658-70-0P  
RL: PRP (Properties); **SPN (Synthetic preparation); PREP (Preparation)**  
(efficient zirconocene-coupling of silicon-substituted diynes to polymers and macrocycles)
- IT 201658-57-3P  
RL: PRP (Properties); **SPN (Synthetic preparation); PREP (Preparation)**  
(model compd.; efficient zirconocene-coupling of silicon-substituted diynes to polymers and macrocycles)
- IT 163086-42-8P 201603-70-5P 201603-71-6P 201603-72-7P 201603-73-8P  
201798-27-8P 201798-30-3P  
FL: RCT (Reactant); **SPN (Synthetic preparation); PREP (Preparation); RACT (Reactant or reagent)**  
(monomer; efficient zirconocene-coupling of silicon-substituted diynes to polymers and macrocycles)
- IT 1078-97-3P **2615-23-8P** 16165-95-0P 17937 46-1P 74606-84-1P

201603-69-2P

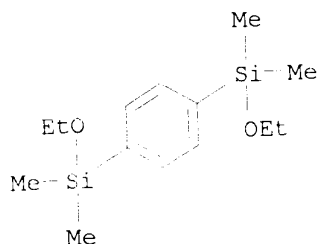
RL: RCT (Reactant); **SPN (Synthetic preparation); PREP**(Preparation); RACT (Reactant or reagent)  
(starting material; efficient zirconocene-coupling of  
silicon-substituted diynes to polymers and macrocycles)

IT 2615-23-8P

RL: RCT (Reactant); **SPN (Synthetic preparation); PREP**(Preparation); RACT (Reactant or reagent)  
(starting material; efficient zirconocene-coupling of  
silicon-substituted diynes to polymers and macrocycles)

RN 2615-23-8 HCAPLUS

CN Silane, 1,4-phenylenebis[ethoxydimethyl- (9CI) (CA INDEX NAME)



L34 ANSWER 10 OF 34 HCAPLUS COPYRIGHT 2003 ACS

AN 1997:753736 HCAPLUS

DN 128:89192

TI Functionalization and crosslinking of organosilicon polymers

AU Uhlig, Wolfram

CS ETH-Zentrum, Eidgenossische Technische Hochschule Zurich, Laboratorium fur  
Anorganische Chemie, CH-8092 Zurich, Switz.SO Journal of Organometallic Chemistry (1997), 545-546, 281-289  
CODEN: JORCAI; ISSN: 0022-328X

PB Elsevier Science S.A.

DT Journal

LA German

CC 35-7 (Chemistry of Synthetic High **Polymers**)

Section cross-reference(s): 37

AB Novel poly(**silyleneacetylenes**), poly(silylenemethylenes), and poly(silylenephenylenes) with a regular alternating structure in the polymer backbone have been prepd. by reductive coupling of special substituted silyl triflates or chlorides with potassium-graphite or by ring-opening polymn. of 1,3-disilacyclobutanes. The functionalization of these polymers with F3CSO3H and following reactions with Grignard reagents, amines, or lithium tetrahydridoaluminate gave novel polymeric derivs. The protodesilylation reaction could be controlled by using different leaving groups (Ph, p-tolyl, or p-anisyl groups). In this way, the regular structure of the polymer backbone could be kept during the functionalization reactions. Novel network polymers have been obtained by intermol. hydrosilylation reactions of the modified polymer derivs. The polymers were characterized by NMR spectroscopy (<sup>29</sup>Si, <sup>13</sup>C, <sup>1</sup>H).

ST polysilylene functionalization crosslinking; **polyacetylenesilylene**

prepn crosslinking; polyphenylenesilylene triflate deriv;

polysilylenemethylene prepn crosslinking

IT Crosslinking

(functionalization and crosslinking of organosilicon polymers)

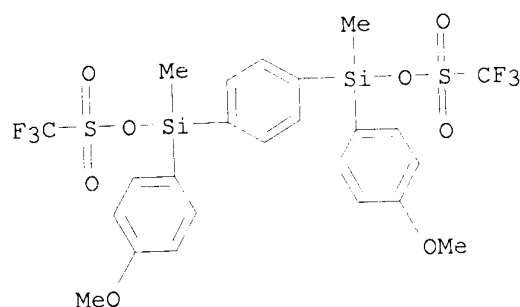
- IT Polycarbosilanes  
RL: RCT (Reactant); **SPN (Synthetic preparation); PREP (Preparation)**; RACT (Reactant or reagent)  
(functionalization and crosslinking of organosilicon polymers)
- IT Polysilanes  
Polysilanes  
RL: RCT (Reactant); **SPN (Synthetic preparation); PREP (Preparation)**; RACT (Reactant or reagent)  
(**polyacetylene-**; functionalization and crosslinking of organosilicon polymers)
- IT Polysilanes  
Polysilanes  
RL: RCT (Reactant); **SPN (Synthetic preparation); PREP (Preparation)**; RACT (Reactant or reagent)  
(polyphenyl-; functionalization and crosslinking of organosilicon polymers)
- IT **Polyacetylenes, preparation**  
**Polyacetylenes, preparation**  
Polyphenyls  
Polyphenyls  
RL: RCT (Reactant); **SPN (Synthetic preparation); PREP (Preparation)**; RACT (Reactant or reagent)  
(polysilane-; functionalization and crosslinking of organosilicon polymers)
- IT 16941-12-1, Hexachloroplatinic acid 37367-99-0, Potassium graphite  
RL: CAT (Catalyst use); **USES (Uses)**  
(catalyst; in functionalization and crosslinking of organosilicon polymers)
- IT 74-89-5, Methylamine, reactions 75-01-4, Vinyl chloride, reactions  
RL: RCT (Reactant); RACT (Reactant or reagent)  
(crosslinking agent; functionalization and crosslinking of organosilicon polymers)
- IT 123438-61-9P 201135-92-4DP, reaction products with trifluoromethanesulfonic acid 201135-92-4P 201135-95-7P  
201135-96-8DP, reaction products with trifluoromethanesulfonic acid  
201135-97-9P 201135-98-0DP, reaction products with trifluoromethanesulfonic acid 201135-98-0P 201135-99-1DP, reaction products with trifluoromethanesulfonic acid 201135-99-1P  
201136-01-8DP, reaction products with trifluoromethanesulfonic acid  
201136-01-8P 201136-04-1P **201136-06-3P** 201136-07-4DP, reaction products with trifluoromethanesulfonic acid 201136-07-4P  
RL: RCT (Reactant); **SPN (Synthetic preparation); PREP (Preparation)**; RACT (Reactant or reagent)  
(functionalization and crosslinking of organosilicon polymers)
- IT 123438-61-9DP, reaction products with trifluoromethanesulfonic acid  
201135-97-9DP, reaction products with trifluoromethanesulfonic acid  
201136-04-1DP, reaction products with trifluoromethanesulfonic acid  
**201136-06-3DP**, reaction products with trifluoromethanesulfonic acid  
RL: **SPN (Synthetic preparation); PREP (Preparation)**  
(functionalization and crosslinking of organosilicon polymers)
- IT 1493-13-6DP, Triflic acid, reaction products with organosilicon polymers  
RL: RCT (Reactant); **SPN (Synthetic preparation); PREP (Preparation)**; RACT (Reactant or reagent)  
(functionalizing agent; functionalization and crosslinking of organosilicon polymers)
- IT 16853-85-3, Lithium aluminum hydride  
RL: NUU (Other use, unclassified); **USES (Uses)**

- (in functionalization and crosslinking of organosilicon polymers)
- IT 192461-52-2P 201136-02-9P  
 RL: RCT (Reactant); **SPN (Synthetic preparation); PREP (Preparation)**; RACT (Reactant or reagent)  
 (monomer precursor; functionalization and crosslinking of organosilicon polymers)
- IT 106-37-6, 1,4-Dibromobenzene 106-38-7, p-Tolyl bromide 108-86-1, Phenyl bromide, reactions 124-40-3, Dimethylamine, reactions 593-63-5, Ethynyl chloride 1628-00-8, 1,3-Dichloro-1,3-dimethyl-1,3-disilacyclobutane 201135-94-6 201136-03-0  
 RL: RCT (Reactant); RACT (Reactant or reagent)  
 (monomer starting material; functionalization and crosslinking of organosilicon polymers)
- IT 201135-91-3P 201135-93-5P 201136-05-2P  
 RL: RCT (Reactant); **SPN (Synthetic preparation); PREP (Preparation)**; RACT (Reactant or reagent)  
 (monomer; functionalization and crosslinking of organosilicon polymers)
- IT 201136-06-3P  
 RL: RCT (Reactant); **SPN (Synthetic preparation); PREP (Preparation)**; RACT (Reactant or reagent)  
 (functionalization and crosslinking of organosilicon polymers)
- RN 201136-06-3 HCAPLUS  
 CN Methanesulfonic acid, trifluoro-, 1,4-phenylenebis[methyl(4-methoxyphenyl)silylene] ester, homopolymer (9CI) (CA INDEX NAME)

CM 1

CRN 201136-05-2

CMF C24 H24 F6 O8 S2 Si2

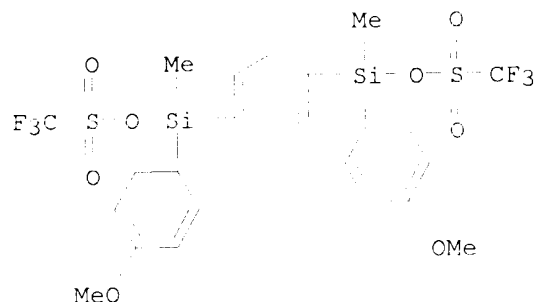


- IT 201136-06-3DP, reaction products with trifluoromethanesulfonic acid  
 RL: **SPN (Synthetic preparation); PREP (Preparation)**  
 (functionalization and crosslinking of organosilicon polymers)
- RN 201136-06-3 HCAPLUS  
 CN Methanesulfonic acid, trifluoro-, 1,4-phenylenebis[methyl(4-methoxyphenyl)silylene] ester, homopolymer (9CI) (CA INDEX NAME)

CM 1

CRN 201136-05-2

CMF C24 H24 F6 O8 S2 Si2



IT 201136-05-2P

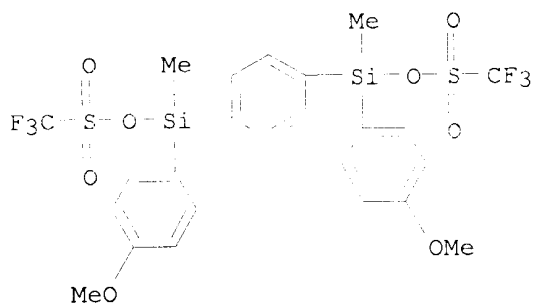
RL: RCT (Reactant); SPN (Synthetic preparation); PREP

(Preparation); RACT (Reactant or reagent)

(monomer; functionalization and crosslinking of organosilicon polymers)

RN 201136-05-2 HCAPLUS

CN Methanesulfonic acid, trifluoro-, 1,4-phenylenebis[methyl(4-methoxyphenyl)silylene] ester (9CI) (CA INDEX NAME)



L34 ANSWER 11 OF 34 HCAPLUS COPYRIGHT 2003 ACS

AN 1997:679910 HCAPLUS

DN 127:307415

TI Using Hydrosilylation to Assemble Organometallic Polymers Containing Combinations of Silicon-Based Functional Groups

AU Kuhnen, Thomas; Ruffolo, Ralph; Stradiotto, Mark; Ulbrich, Dagmar; McGlinchey, Michael J.; Brook, Michael A.

CS Department of Chemistry, McMaster University, Hamilton, ON, L8S 4M1, Can.

SO Organometallics (1997), 16(23), 5042-5047

CODEN: ORGND7; ISSN: 0276-7333

PB American Chemical Society

DT Journal

LA English

CC 29-6 (Organometallic and Organometalloidal Compounds)

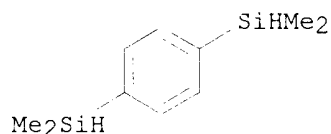
Section cross-reference(s): 35

AB A set of Si-based monomers was prepd. by hydrosilylation reactions. These compds. serve as a mol. set of organosilicon compds. from which well-defined oligomers can be assembled. The org. functional groups contained in the monomers include alkynes (e.g.  $\text{Ph}_2\text{SiHCH}_2\text{CH}_2\text{CH}_2\text{SiMe}_2\text{C.tplbond.CSiMe}_3$ ), diynes (e.g.  $\text{H}_2\text{C:CHCH}_2\text{SiMe}_2\text{C.tplbond.CC.tplbond.CSiMe}_2\text{CH}_2\text{CH:CH}_2$ ), and arylsilanes (e.g.  $p\text{-(Me}_3\text{SiC.tplbond.CSiMe}_2\text{CH}_2\text{CH}_2\text{CH}_2\text{SiMe}_2)_2\text{C}_6\text{H}_4$ ) for use as ligands for

transition metals, and also disiloxanes (e.g.  $O(SiMe_2CH_2CH_2CH_2SiMe_2C.tplbond.CSiMe_3)_2$ ). Depending upon the catalyst (Wilkinson's -  $(Ph_3P)_3RhCl$ , or Karstedt's -  $Pt_2[(CH_2:CHSiMe_2)_2O]_3$ ) and temp. used, it was possible to prep. sym. or asym. mols. from  $Ph_2SiH_2$ . The direct polymn. of these small mols. was limited by the degree to which the concn. of functional groups could be matched; decamers were the highest mol. wt. materials prepd. (e.g.  $Ph_2Si[CH_2CH_2CH_2SiMe_2C.tplbond.CSiMe_2CH_2CH_2CH_2SiPh_2]_n$ ). These fragments were also oligomerized with a HSi-terminated silicone to give a functional organosilicone polymer,  $[Me_2SiCH_2CH_2CH_2SiMe_2C.tplbond.CSiMe_2CH_2CH_2CH_2[SiMe_2O]_n]_m$ , of mol. wt. .hivin.Mw = 140,000.

- ST unsatd silane hydrosilylation oligomer polymer formation; silicone hydrosilylation allylsilylethynylsilane
- IT Hydrosilylation  
(for prepn. of oligomers and polymers using unsatd.-alkyl silanes)
- IT Polymerization  
(oligomerization; of (allylsilylethynyl)silane with hydrogen-terminated silicone or with diphenylsilane)
- IT Polysiloxanes, preparation  
Polysiloxanes, preparation  
Polysiloxanes, preparation  
RL: **SPN (Synthetic preparation); PREP (Preparation)**  
(polyacetylene-polycarbosilane-; prepn. via hydrosilylation of hydrogen-terminated silicone with bis(allyldimethylsilyl)acetylene)
- IT Polycarbosilanes  
Polycarbosilanes  
Polycarbosilanes  
RL: **SPN (Synthetic preparation); PREP (Preparation)**  
(polyacetylene-siloxane-; prepn. via hydrosilylation of hydrogen-terminated silicone with bis(allyldimethylsilyl)acetylene)
- IT Polyacetylenes, preparation  
Polyacetylenes, preparation  
Polyacetylenes, preparation  
RL: **SPN (Synthetic preparation); PREP (Preparation)**  
(polycarbosilane-siloxane-; prepn. via hydrosilylation of hydrogen-terminated silicone with bis(allyldimethylsilyl)acetylene)
- IT Polysiloxanes, preparation  
RL: **SPN (Synthetic preparation); PREP (Preparation)**  
(prepn. via hydrosilylation of hydrogen-terminated silicone with bis(allyldimethylsilyl)acetylene)
- IT Silanes  
RL: RCT (Reactant); RACT (Reactant or reagent)  
(unsatd.-alkyl; for prepn. of oligomers and polymers via hydrosilylation)
- IT 1066-54-2, (Trimethylsilyl)ethyne  
RL: RCT (Reactant); RACT (Reactant or reagent)  
(for prepn. of (allylsilylethynyl)silane)
- IT 79-01-6, Trichloroethylene, reactions 87-68-3, Hexachlorobutadiene 4028-23-3, Allyldimethylchlorosilane  
RL: RCT (Reactant); RACT (Reactant or reagent)  
(for prepn. of unsatd.-alkyl silanes for hydrosilylations)
- IT **2488-01-9** 3277-26-7, 1,1,3,3-Tetramethyldisiloxane 115254-29-0  
RL: RCT (Reactant); RACT (Reactant or reagent)  
(hydrosilylation with (allylsilylethynyl)silane)
- IT 100-42-5, reactions 592-41-5, 1-Hexene, reactions

- PL: PCT (Reactant); RACT (Reactant or reagent)  
(hydrosilylation with (silylethynylsilylpropyl)diphenylsilane)
- IT 1631-83-0, Diphenylchlorosilane  
RL: PCT (Reactant); RACT (Reactant or reagent)  
(hydrosilylation with bis(allyldimethylsilyl)**acetylene**)
- IT 775-12-2, Diphenylsilane  
RL: PCT (Reactant); RACT (Reactant or reagent)  
(hydrosilylation with unsatd.-alkyl silanes)
- IT 154714-08-6P, Bis(allyldimethylsilyl)**acetylene** 197384-70-6P,  
1,4-Bis(allyldimethylsilyl)-1,3-butadiyne  
RL: PCT (Reactant); **SPN (Synthetic preparation); PREP**  
(Preparation); RACT (Reactant or reagent)  
(prepn. and hydrosilylation of)
- IT 197384-63-7P, Allyldimethyl(trimethylsilylethynyl)silane 197384-64-8P,  
(3-(Diphenylsilyl)propyl)dimethyl(trimethylsilylethynyl)silane  
RL: RCT (Reactant); **SPN (Synthetic preparation); PREP**  
(Preparation); RACT (Reactant or reagent)  
(prepn. and hydrosilylation reactions of)
- IT 197384-74-0P, Bis((3-(diphenylsilyl)propyl)dimethylsilyl)**acetylene**  
RL: RCT (Reactant); **SPN (Synthetic preparation); PREP**  
(Preparation); RACT (Reactant or reagent)  
(prepn. and hydrosilylation with (allylsilylethynyl)silane)
- IT 197384-65-9P, Bis(3-(dimethyl(trimethylsilylethynyl)silyl)propyl)diphenylsilane 197384-66-0P, (3-(Dimethyl(trimethylsilylethynyl)silyl)propyl)(hexyl)diphenylsilane 197384-67-1P, (3-(Dimethyl(trimethylsilylethynyl)silyl)propyl)diphenyl(2-phenylethyl)silane 197384-68-2P, 1,3-Bis(3-(dimethyl(trimethylsilylethynyl)silyl)propyl)-1,1,3,3-tetramethyldisiloxane 197384-69-3P 197384-71-7P 197384-72-8P,  
Bis(3-(chlorodiphenylsilyl)propyl)dimethylsilyl)**acetylene**  
197384-73-9P, p-Bis((3-(dimethyl(trimethylsilylethynyl)silyl)propyl)dimethylsilyl)benzene 197384-75-1P 197384-76-2P 197384-77-3P  
RL: **SPN (Synthetic preparation); PREP (Preparation)**  
(prepn. of)
- IT **2488-01-9**  
RL: RCT (Reactant); RACT (Reactant or reagent)  
(hydrosilylation with (allylsilylethynyl)silane)
- RN 2488-01-9 HCAPLUS  
CN Silane, 1,4-phenylenebis(dimethyl- (9CI) (CA INDEX NAME)

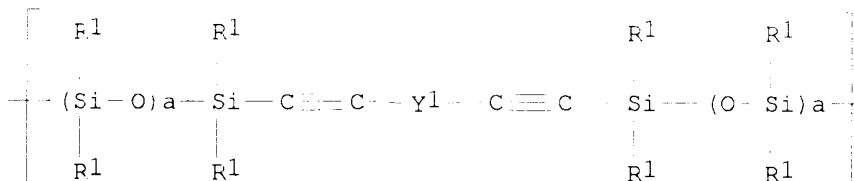


- L34 ANSWER 12 OF 34 HCAPLUS COPYRIGHT 2003 ACS  
AN 1997:617458 HCAPLUS  
DN 127:293801  
TI **Acetylene** linkage-containing silicon polymers, their  
manufacture, and cured products of the polymers  
IN Sugimoto, Toshiya; Fujisaka, Tomohiro; Okada, Kazuhiro; Yamaguchi, Bunji  
PA Sekisui Chemical Co., Ltd., Japan  
SO Jpn. Kokai Tokkyo Koho, 9 pp.  
CODEN: JKXXAF  
DT Patent

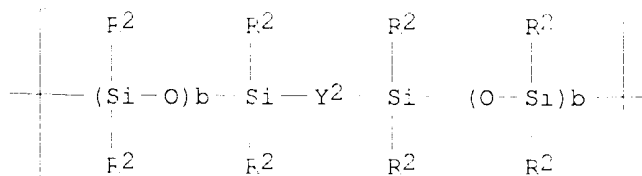


LA Japanese  
 IC ICM C08G077-52  
 ICS C08G077-50  
 CC 35-7 (Chemistry of Synthetic High **Polymers**)  
 FAN.CNT 1

	PATENT NO.	KIND	DATE	APPLICATION NO.	DATE
PI	JP 09241383	A2	19970916	JP 1996-49078	19960306
PRAI	JP 1996-49078		19960306		
GI					



I



II

AB Polymers having structural units I and II linked by oxygen and having wt.-av. mol. wt. >500 are synthesized (R<sup>1</sup>, R<sup>2</sup> = H, C1-20 alkyl, C6-12 aryl, SiR<sub>3</sub>, SiR<sub>4</sub>; R<sub>3</sub>, R<sub>4</sub> = H, C1-20 alkyl, C6-12 aryl; a, b = 0, 1-19; Y<sup>1</sup>, Y<sup>2</sup> = C6-30 arylene). The polymers can be crosslinked by heat, light, or electron beam. A polymer was prepd. from 1,3-bis(hydroxydiphenylsilylethynyl)benzene and 1,4-bis(hydroxydimethylsilyl)benzene.

ST polysiloxane **acetylene** contg synthesis

IT Polysiloxanes, preparation

RL: **IMF (Industrial manufacture); PREP (Preparation)**

(**acetylene** linkage-contg. silicon polymers manuf. and cured products)

IT **196960-36-8P** 196960-37-9P

RL: **IMF (Industrial manufacture); PREP (Preparation)**

(**acetylene** linkage-contg. silicon polymers manuf. and cured products)

IT **196960-36-8P**

RL: **IMF (Industrial manufacture); PREP (Preparation)**

(**acetylene** linkage-contg. silicon polymers manuf. and cured products)

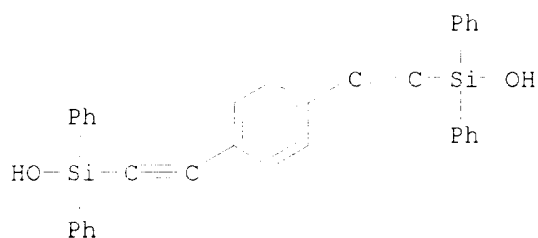
RN 196960-36-8 HCAPLUS

CN Silanol, 1,4-phenylenebis(dimethyl-, polymer with (1,4-phenylenedi-2,1-ethynediyl)bis[diphenylsilanol], block (9CI) (CA INDEX NAME)

CM 1

CRN 180797-46-0

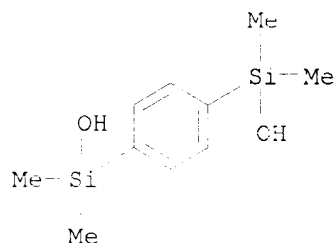
CMF C34 H26 O2 Si2



CM 2

CRN 2754-32-7

CMF C10 H18 O2 Si2



L34 ANSWER 13 OF 34 HCAPLUS COPYRIGHT 2003 ACS

AN 1997:587738 HCAPLUS

DN 127:248560

TI Heat-resistant silicon compounds and their manufacture

IN Yamaguchi, Bunji; Fujisaka, Tomohiro; Okada, Kazuhiro

PA Sekisui Chemical Co., Ltd., Japan

SO Jpn. Kokai Tokkyo Koho, 10 pp.

CODEN: JKXXAF

DT Patent

LA Japanese

IC ICM C08G077-52

CC 35-7 (Chemistry of Synthetic High Polymers)

FAN.CNT 1

	PATENT NO.	KIND	DATE	APPLICATION NO.	DATE
PI	JP 09227689	A2	19970902	JP 1996-38032	19960226
PRAI	JP 1996-38032		19960226		

AB The Si compds. show wt.-av. mol. wt. 500-1.0 .times. 10<sup>7</sup> and have units R<sub>1</sub>SiC.tplbond.CYC.tplbond.CSiR<sub>1</sub>2 and R<sub>2</sub>SiYSiR<sub>2</sub>2 (R<sub>1</sub>, R<sub>2</sub> = H, C<sub>1</sub>-20 alkyl, C<sub>6</sub>-12 aryl; Y = C<sub>6</sub>-30 arylene) which are bonded via 1 oxygen. The process contains dehydration or hydrolysis and condensation of diethynylarylene derivs. Z<sub>1</sub>R<sub>1</sub>2SiC.tplbond.CYC.tplbond.CSiR<sub>1</sub>2Z<sub>1</sub> and arylene derivs. Z<sub>1</sub>R<sub>2</sub>2SiYSiR<sub>2</sub>2Z<sub>1</sub> (F<sub>1</sub>, R<sub>2</sub>, Y are same as above; Z<sub>1</sub> = OH, alkoxy, halo). The process contains polycondensation of (i) R<sub>3</sub>OR<sub>1</sub>2SiC.tplbond.CYC.tplbond.CSiR<sub>1</sub>2OR<sub>3</sub> and Z<sub>2</sub>R<sub>1</sub>2SiYSiR<sub>1</sub>2Z<sub>2</sub> (sic), (ii)

Z2R12SiC.tplbond.CYC.tplbond.CSiR12Z2 and R12(R3O)SiYSiR12OR3 (sic), or (iii) R12(R3O)SiC.tplbond.CYC.tplbond.CSiR12Z2 and R12(R3O)SiYSiR12Z2 (sic) (R1-R3, Y are same as above; Z2 = dialkylamino, acetamide). A compd. obtained by curing the Si compds. with heat, light, or elec. ray are also claimed. Thus, 1.66 g 1,4-bis(hydroxydimethylsilyl)benzene and 3.77 g 1,4-bis(hydroxydiphenylsilylethynyl)benzene were treated at 150-200.degree. in PhMe in the presence of a catalyst obtained from 0.1 mol 2-ethylhexanoic acid and 0.1 mol 1,1,3,3-tetramethylguanidine to give a copolymer showing T5 366.degree. and T10 484.degree. [5% and 10% wt. decrease (T5, T10) by heating up from 30.degree. to 800.degree. at speed 10.degree./min], and wt. retention at 800.degree. 30%. The copolymer was cast at 120.degree. to give a cured body showing Young's modulus in flexure 3.8 GPa.

ST ethynylarylene silyl deriv copolymer prepn; aryene silyl deriv copolymer prepn; hydroxydimethylsilyl benzene copolymer prepn heat resistance; hydroxydiphenylsilylethynyl benzene copolymer prepn heat resistance; polycarbosilane polysiloxane prepn heat resistance

IT Polysiloxanes, preparation

Polysiloxanes, preparation

RL: IMF (Industrial manufacture); PRP (Properties); PREP (Preparation)  
(polycarbosilane-; prepn. of heat-resistant Si compds. from diethynylarylenes and aryles)

IT Heat-resistant materials

(prepn. of heat-resistant Si compds. from diethynylarylenes and aryles)

IT Polycarbosilanes

Polycarbosilanes

RL: IMF (Industrial manufacture); PFF (Properties); PREP (Preparation)  
(siloxane-; prepn. of heat-resistant Si compds. from diethynylarylenes and aryles)

IT 195512-31-3P

RL: IMF (Industrial manufacture); PRP (Properties); PREP (Preparation)

(prepn. of heat-resistant Si compds. from diethynylarylenes and aryles)

IT 195512-31-3P

RL: IMF (Industrial manufacture); PRP (Properties); PREP (Preparation)

(prepn. of heat-resistant Si compds. from diethynylarylenes and aryles)

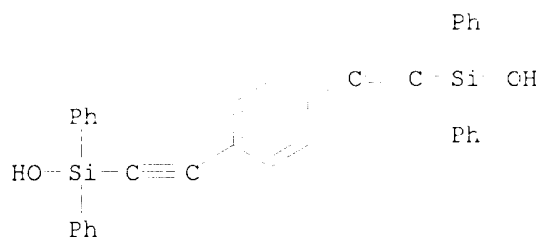
RN 195512-31-3 HCAPLUS

CN Silanol, 1,4-phenylenebis(dimethyl-, polymer with (1,4-phenylenedi-2,1-ethynediyl)bis(diphenylsilanol] (9CI) (CA INDEX NAME)

CM 1

CRN 180797-46-0

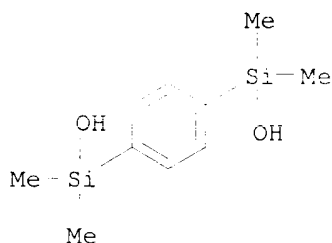
CMF C34 H26 O2 Si2



CM 2

CRN 2754-32-7

CMF C10 H18 O2 Si2



L34 ANSWER 14 OF 34 HCAPLUS COPYRIGHT 2003 ACS

AN 1997:140494 HCAPLUS

DN 126:144969

TI Crosslinked siloxanes with improved photoreactivity, moldability, heat resistance, and flame retardance and their preparation methods

IN Yamaguchi, Bunji; Fujisaka, Tomohiro; Okada, Kazuhiro

PA Sekisui Chemical Co Ltd, Japan

SO Jpn. Kokai Tokkyo Koho, 6 pp.

CODEN: JKXXAF

DT Patent

LA Japanese

IC ICM C08G077-00

CC 37-3 (Plastics Manufacture and Processing)

FAN.CNT 1

	PATENT NO.	KIND	DATE	APPLICATION NO.	DATE
PI	JP 08325379	A2	19961210	JP 1995-133710	19950531
PRAI	JP 1995-133710		19950531		

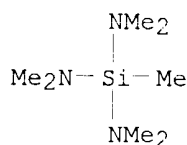
AB The title siloxanes exhibit wt.-av. mol. wt. .gtoreq.500 and comprise units of SiR1R2YSiR3R4O and R5SiO3 (R1-5 = H, C1-20 alkyl, C6-12 aryl; Y = alkylene, vinylene, **acetylene**, phenylene, O, divalent org. Si groups, and divalent groups contg. the above groups other than an O-O bond). A prepn. method comprises polycondensation of HOSiR1R2YR3R4OH and trifunctional silane derivs. R5SiZ3 (R1-5 = same as above; Z = halo, dialkylamino, ureido) and dehydration and condensation of the residual silanol groups. Thus, adding dropwise 1 mol% MeSi(NMe2)3 in PhMe to 5 g p-HOSiMe2C6H4SiMe2OH, refluxing for 4 h, adding a PhOH soln. contg. 2-ethylhexanoic acid and hexylamine, polycondensation for 3 h, and pptn.

- in MeOH gave a polymer with mol. wt. 51,000 having units of  
 p-SiMe<sub>2</sub>C<sub>6</sub>H<sub>4</sub>SiMe<sub>2</sub>O and MeSiO<sub>3</sub>.
- ST crosslinked siloxane methylaminomethylsilane hydroxydimethylsilylbenzene  
 polymn
- IT Heat-resistant materials  
 (manuf. of crosslinked siloxanes with improved photoreactivity and  
 moldability and heat and fire resistance)
- IT Polysiloxanes, preparation  
 RL: **IMF (Industrial manufacture)**; PPP (Properties); **PREP**  
**(Preparation)**  
 (manuf. of crosslinked siloxanes with improved photoreactivity and  
 moldability and heat and fire resistance)
- IT Polymerization  
 (of bis(hydroxydimethylsilyl)benzene and tris(dimethylamino)methylsilan  
 e for crosslinked siloxanes with improved photoreactivity and  
 moldability and heat and fire resistance)
- IT Crosslinking agents  
 (trifunctional silanes; manuf. of crosslinked siloxanes with improved  
 photoreactivity and moldability and heat and fire resistance)
- IT Silanes  
 RL: MDA (Modifier or additive use); USES (Uses)  
 (trifunctional, crosslinking agents; manuf. of crosslinked siloxanes  
 with improved photoreactivity and moldability and heat and fire  
 resistance)
- IT **186652-21-1P**  
 RL: **IMF (Industrial manufacture)**; PPP (Properties); **PREP**  
**(Preparation)**  
 (manuf. of crosslinked siloxanes with improved photoreactivity and  
 moldability and heat and fire resistance)
- IT **186652-21-1P**  
 RL: **IMF (Industrial manufacture)**; PPP (Properties); **PREP**  
**(Preparation)**  
 (manuf. of crosslinked siloxanes with improved photoreactivity and  
 moldability and heat and fire resistance)
- RN 186652-21-1 HCAPLUS
- CN Silanol, 1,4-phenylenebis(dimethyl-, polymer with  
 heptamethylsilanetriamine (9CI) (CA INDEX NAME)

CM 1

CRN 3768-57-8

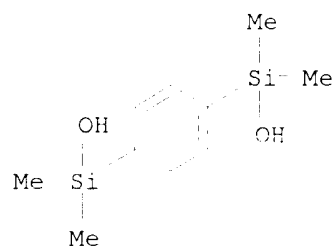
CMF C7 H21 N3 Si



CM 2

CRN 2754-32-7

CMF C10 H18 O2 Si2



- L34 ANSWER 15 OF 34 HCAPLUS COPYRIGHT 2003 ACS  
 AN 1996:562240 HCAPLUS  
 DN 125:248645  
 TI Inorganic-organic borocarbosilicate based hybrid polymers containing **diacetylenic** functionalities  
 AU Sundar, Raj A.; Keller, Teddy M.  
 CS Chemistry Division, Naval Research Laboratory, Washington, DC, 20375-5320, USA  
 SO Polymer Preprints (American Chemical Society, Division of Polymer Chemistry) (1996), 37(2), 301-302  
 CODEN: ACPPAY; ISSN: 0032-3934  
 PB American Chemical Society, Division of Polymer Chemistry  
 DT Journal  
 LA English  
 CC 35-5 (Chemistry of Synthetic High **Polymers**)  
 AB Polymers contg. boroxane and Si and **diacetylenic** units in the backbone were synthesized from PhB(OH)<sub>2</sub>, Ph<sub>2</sub>SiCl<sub>2</sub> [or 1,4-bis(chlorodimethylsilyl)benzene], and 1,4-dithiobutadiyne and their structures were characterized using FTIR and <sup>13</sup>C NMR spectroscopies. Thermal and thermal oxidative degrdn. studies were carried out.  
 ST borocarbosilicate polymer prepn degrdn; **polydiacetylene**  
 polysilphenylene boroxane; silicon contg boroxane **polyacetylene**  
 IT Boroxanes  
 RL: PEP (Physical, engineering or chemical process); PRP (Properties); **SPN (Synthetic preparation); PREP (Preparation); PROC** (Process)  
 (silicon-contg.; inorg.-org. borocarbosilicate-based hybrid polymers)  
 IT Polymer degradation  
 (oxidative, of inorg.-org. borocarbosilicate-based hybrid polymers)  
 IT Polymer degradation  
 (oxidative, thermal, of inorg.-org. borocarbosilicate-based hybrid polymers)  
 IT **Polyacetylenes**, preparation  
 RL: PEP (Physical, engineering or chemical process); PRP (Properties); **SPN (Synthetic preparation); PREP (Preparation); PROC** (Process)  
 (**polydiacetylenes**, boroxane-, silicon-contg.; inorg.-org. borocarbosilicate-based hybrid polymers)  
 IT Polycarbosilanes  
 RL: PEP (Physical, engineering or chemical process); PRP (Properties); **SPN (Synthetic preparation); PREP (Preparation); PROC** (Process)  
 (polysilphenylenes, boroxane-; inorg.-org. borocarbosilicate-based hybrid polymers)  
 IT 182166-73-0P, 1,4-Bis(chlorodimethylsilyl)benzene-phenylboronic acid copolymer **182166-74-1P**, 1,4-Bis(chlorodimethylsilyl)benzene-

phenylboronic acid copolymer, SRU 182166-75-2P, Dichlorodiphenylsilane-1,4-dilithiobutadiyne-phenylboronic acid copolymer 182166-76-3P, 1,4-Bis(chlorodimethylsilyl)benzene-1,4-dilithiobutadiyne-phenylboronic acid copolymer

RL: PEP (Physical, engineering or chemical process); PRP (Properties);

**SPN (Synthetic preparation); PREP (Preparation); PROC**  
(Process)

(inorg.-org. borocarbosilicate-based hybrid polymers)

IT **182166-74-1P**, 1,4-Bis(chlorodimethylsilyl)benzene-phenylboronic acid copolymer, SRU

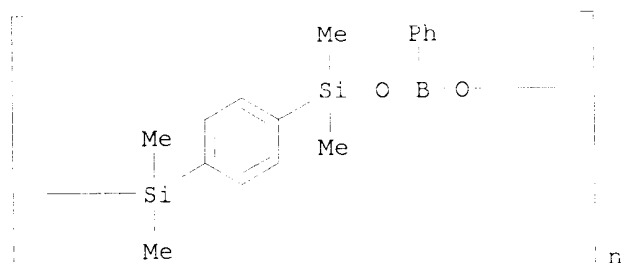
RL: PEP (Physical, engineering or chemical process); PRP (Properties);

**SPN (Synthetic preparation); PREP (Preparation); PROC**  
(Process)

(inorg.-org. borocarbosilicate-based hybrid polymers)

RN 182166-74-1 HCAPLUS

CN Poly[oxy(phenylborylene)oxy(dimethylsilylene)-1,4-phenylene(dimethylsilylene)] (9CI) (CA INDEX NAME)



L34 ANSWER 16 OF 34 HCAPLUS COPYRIGHT 2003 ACS

AN 1996:404644 HCAPLUS

DN 125:60058

TI Silicon-containing polymer cured products with good heat and fire resistance and manufacture thereof

IN Inoe, Koji; Iwata, Kenji; Mitsuzuka, Masahiko; Ito, Masayoshi

PA Mitsui Toatsu Chemicals, Japan

SO Jpn. Kokai Tokkyo Koho, 9 pp.

CODEN: JKXXAF

DT Patent

LA Japanese

IC ICM C08L083-04

CC 37-6 (Plastics Manufacture and Processing)

FAN.CNT 1

	PATENT NO.	KIND	DATE	APPLICATION NO.	DATE
PI	JP 08092482	A2	19960409	JP 1994-231598	19940927
PRAI	JP 1994-231598		19940927		

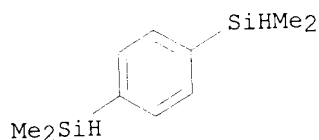
AB The title products are obtained by reacting hydrosilane compds. with Si-contg. polymers of -Si(R1)HC.tplbond.CR2C.tplbond.C- (R1 = H, C1-30 alkyl, alkenyl, alkynyl, Ph, naphthyl; R2 = C1-30 alkylene, alkenylene, alkynylene, phenylene, naphthylene, with or without substituents such as halogens, OH group, amino group, carboxy group, etc.). A mixt. of 4.5 g poly(phenyleneethynylene-1,3-phenyleneethynylene) and 1.9 g 1,4-bis(dimethylsilyl)benzene was fused in N at 150.degree. then heated at 400.degree. for 1 h to obtain a cured product with 5% wt.-loss temp. (in Ar) 860.degree., O index (JIS K 7201) 51, and bending strength 27 MPa.

ST heat fire resistant carbosilane polymer  
IT Polycarbosilanes  
RL: IMF (Industrial manufacture); PRP (Properties); PREP (Preparation)  
(silicon-contg. polymer cured products with good heat and fire  
resistance and manuf. thereof)  
IT Heat-resistant materials  
(fire-resistant, silicon-contg. polymer cured products with good heat  
and fire resistance and manuf. thereof)  
IT Fire-resistant materials  
(heat-resistant, silicon-contg. polymer cured products with good heat  
and fire resistance and manuf. thereof)  
IT 178374-61-3P  
RL: IMF (Industrial manufacture); PRP (Properties); PREP  
(Preparation)  
(silicon-contg. polymer cured products with good heat and fire  
resistance and manuf. thereof)  
IT 178374-61-3P  
RL: IMF (Industrial manufacture); PRP (Properties); PREP  
(Preparation)  
(silicon-contg. polymer cured products with good heat and fire  
resistance and manuf. thereof)  
RN 178374-61-3 HCAPLUS  
CN Silane, 1,4-phenylenebis(dimethyl-, polymer with 1,3-diethynylbenzene and  
phenylsilane (9CI) (CA INDEX NAME)

CM 1

CRN 2488-01-9

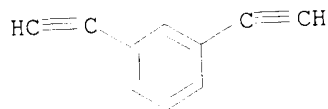
CMF C10 H18 Si2



CM 2

CRN 1785-61-1

CMF C10 H6



CM 3

CRN 694-53-1

CMF C6 H8 Si



SiH<sub>3</sub>

- L34 ANSWER 17 OF 34 HCAPLUS COPYRIGHT 2003 ACS  
 AN 1995:993242 HCAPLUS  
 DN 124:88049  
 TI Polymeric Organosilicon Systems. 25. Preparation of Branched Polymers by Regiospecific Hydrosilylation of Poly[(silylene)diethynylenes] and Their Properties  
 AU Kunai, Atsutaka; Toyoda, Eiji; Nagamoto, Ikuko; Horio, Tomoyuki; Ishikawa, Mitsuo  
 CS Faculty of Engineering, Hiroshima University, Higashi-Hiroshima, 739, Japan  
 SO Organometallics (1996), 15(1), 75-83  
 CODEN: ORGND7; ISSN: 0276-7333  
 PB American Chemical Society  
 DT Journal  
 LA English  
 CC 35-8 (Chemistry of Synthetic High Polymers)  
 AB Section cross-reference(s): 29  
 Regiospecific 1,2-hydrosilylation reactions of (dimethylsilylene)-, (methylphenylsilylene)-, and (diethylsilylene)diethynylene polymers with 1,4-bis(methylphenylsilyl)benzene in the presence of a catalytic amt. of Rh6(CO)16 afforded the resp. branched polymers with high mol. wts. in high yields. The rate of the hydrosilylation and degree of branching were found to be affected by polarity of the solvent, amts. of the catalyst, reaction temp., and concn. of the polymers. It was found that degrdn. of the resulting branched polymers and also starting polymers readily took place when they were treated with ethanol in the presence of triphenylphosphine. The reaction of poly[(tetramethyldisilanylene)diethynylene] with hydrosilanes in the presence of the rhodium(0) catalyst proceeded to give hydrosilylation products, but scission of the polymer chain was also obsd. A mechanism for the degrdn. of polymers is discussed on the basis of the results obtained for model compds.  
 ST **polyacetylene** polycarbosilane hydrosilylation crosslinking  
 IT Decomposition  
 (of model compds.; in relation to prepn. of branched polymers by regiospecific hydrosilylation of poly[(silylene)diethynylenes])  
 IT Crosslinking  
 (of poly[(silylene)diethynylenes] by hydrosilylation)  
 IT Hydrosilylation catalysts  
 (prepn. of branched polymers by regiospecific hydrosilylation of poly[(silylene)diethynylenes] in presence of rhodium compds.)  
 IT Polymer degradation  
 (prepn. of branched polymers by regiospecific hydrosilylation of poly[(silylene)diethynylenes] in relation to)  
 IT Polycarbosilanes  
 RL: PEP (Physical, engineering or chemical process); PRP (Properties); **SPN (Synthetic preparation); PREP (Preparation); PROC (Process)**  
 (polyacetylene-, prepn. of branched polymers by regiospecific hydrosilylation of poly[(silylene)diethynylenes] and their properties)  
 IT **Polyacetylenes**, preparation  
 RL: PEP (Physical, engineering or chemical process); PRP (Properties);

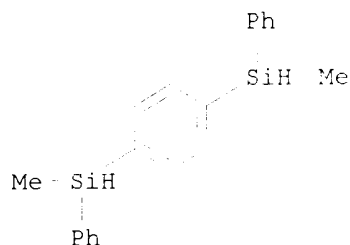
- SPN (Synthetic preparation); PREP (Preparation); PROC (Process)**  
 (polycarbosilane-, prepn. of branched polymers by regiospecific hydrosilylation of poly[(silylene)diethynylenes] and their properties)
- IT 34627-91-3P 172692-36-3P  
 RL: RCT (Reactant); **SPN (Synthetic preparation); PREP (Preparation); RACT (Reactant or reagent)**  
 (model compd.; prepn. of branched polymers by regiospecific hydrosilylation of poly[(silylene)diethynylenes] and their properties)
- IT 103716-76-3P 172692-37-4P 172692-38-5P 172692-39-6P 172692-40-9P 172692-41-0P  
 RL: **SPN (Synthetic preparation); PREP (Preparation)**  
 (model compd.; prepn. of branched polymers by regiospecific hydrosilylation of poly[(silylene)diethynylenes] and their properties)
- IT 617-86-7DP, Triethylsilane, reaction products with poly[(silylene)diethynylenes] **3902-54-3DP**, reaction products with poly[(silylene)diethynylenes] 128359-07-9DP, Dichlorodimethylsilane-1,4-dilithio-1,3-butadiyne copolymer, reaction products with silanes 128359-08-0DP, Dichloromethylphenylsilane-1,4-dilithio-1,3-butadiyne copolymer, reaction products with silanes 128599-08-6DP, Dichlorodimethylsilane-1,4-dilithio-1,3-butadiyne copolymer, SRU, reaction products with silanes 128599-09-7DP, Dichloromethylphenylsilane-1,4-dilithio-1,3-butadiyne copolymer, SFU, reaction products with silanes 129064-81-9DP, 1,2-Dichlorotetramethyldisilane-1,4-dilithio-1,3-butadiyne reaction products with silanes 140391-12-4DP, Dichlorodiethylsilane-1,4-dilithio-1,3-butadiyne copolymer, reaction products with silanes 140391-19-1DP, Dichlorodiethylsilane-1,4-dilithio-1,3-butadiyne copolymer, SRU, reaction products with silanes
- RL: PEP (Physical, engineering or chemical process); PRP (Properties); **SPN (Synthetic preparation); PREP (Preparation); PROC (Process)**  
 (prepn. of branched polymers by regiospecific hydrosilylation of poly[(silylene)diethynylenes] and their properties)
- IT 87-68-3, Hexachloro-1,3-butadiene 106-37-6, 1,4-Dikromobenzene 149-74-6, Dichloromethylphenylsilane 1560-28-7, Chloropentamethyldisilane 1631-82-9, Chloromethylphenylsilane 4526-06-1, (Trimethylsilyl)butadiyne  
 RL: RCT (Reactant); RACT (Reactant or reagent)  
 (prepn. of branched polymers by regiospecific hydrosilylation of poly[(silylene)diethynylenes] and their properties)
- IT **3902-54-3P**, 1,4-Bis(methylphenylsilyl)benzene  
 RL: RCT (Reactant); **SPN (Synthetic preparation); PREP (Preparation); RACT (Reactant or reagent)**  
 (prepn. of branched polymers by regiospecific hydrosilylation of poly[(silylene)diethynylenes] and their properties)
- IT 14874-82-9, (Acetylacetonato)dicarbonylrhodium 28407-51-4, Hexadecacarbonylhexarhodium  
 RL: CAT (Catalyst use); USES (Uses)  
 (prepn. of branched polymers by regiospecific hydrosilylation of poly[(silylene)diethynylenes] in presence of)
- IT 64-17-5, Ethanol, uses  
 RL: CAT (Catalyst use); USES (Uses)  
 (prepn. of branched polymers by regiospecific hydrosilylation of poly[(silylene)diethynylenes] in presence of rhodium catalyst and)
- IT **3902-54-3DP**, reaction products with poly[(silylene)diethynylenes]  
 RL: PEP (Physical, engineering or chemical process); PRP (Properties);

**SPN (Synthetic preparation); PREP (Preparation); PROC**  
(Process)

(prepn. of branched polymers by regiospecific hydrosilylation of  
poly[(silylene)diethynylenes] and their properties)

RN 3902-54-3 HCAPLUS

CN Silane, 1,4-phenylenebis[methylphenyl- (9CI) (CA INDEX NAME)



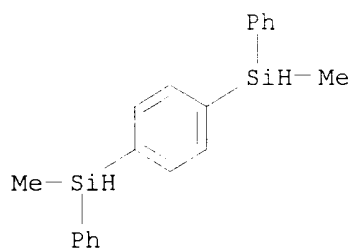
IT **3902-54-3P**, 1,4-Bis(methylphenylsilyl)benzene

RL: RCT (Reactant); **SPN (Synthetic preparation); PREP**  
(Preparation); RACT (Reactant or reagent)

(prepn. of branched polymers by regiospecific hydrosilylation of  
poly[(silylene)diethynylenes] and their properties)

RN 3902-54-3 HCAPLUS

CN Silane, 1,4-phenylenebis[methylphenyl- (9CI) (CA INDEX NAME)



L34 ANSWER 18 OF 34 HCAPLUS COPYRIGHT 2003 ACS

AN 1995:864847 HCAPLUS

DN 124:57034

TI Polycarbosilanes, their preparation, and technical materials from them

IN Tanaka, Masato; Uchimaru, Juko

PA Kogyo Gijutsuin, Japan

SO Jpn. Kokai Tokkyo Koho, 9 pp.

CODEN: JKXXAF

DT Patent

LA Japanese

IC ICM C07F007-08

ICS B01J031-22; B01J031-24; C08G077-60; H01B001-12

ICA C07B061-00

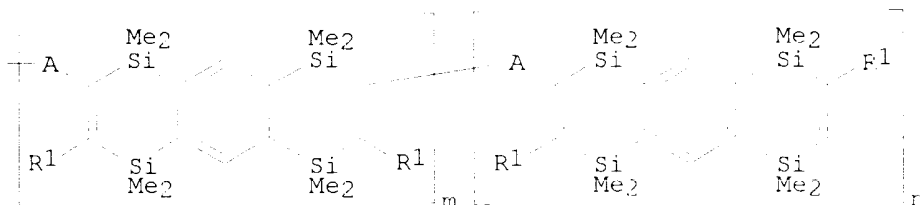
CC 35-4 (Chemistry of Synthetic High **Polymers**)

Section cross-reference(s): **38**

FAN.CNT 1

PATENT NO.	KIND	DATE	APPLICATION NO.	DATE
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PI JP 07179478 A2 19950718 JP 1994-245026 19941011  
 JP 2500383 B2 19960529  
 PRAI JP 1994-245026 19941011  
 GI



I

AB The polycarbosilanes I [R1 = (cyclo) alkyl, aryl, aralkyl; A = alkylene, arylene, aralkylene, oligosilylene, R2SiOSiR2, C6H4OC6H4, ferrocenylene, furylene, thienylene, pyridinediyl; R = alkyl; m, n = 0, integer; m + n .gtoreq. 1] are prepd. by treating 1,2,4,5-tetrakis(dimethylsilyl)benzene (II) with **diacetylenes** R1C.tplbond.CAC.tplbond.CR1 in the presence of Pt compds. Heat-resistant materials, preceramics, and elec. conductive materials contain the polycarbosilanes. Thus, II and 1,4-bis(phenylethynyl)benzene were mixed and kept 18 h at 30.degree. in the presence of Pt(CH2:CH2)(PPh3)2 to obtain 91% heat-resistant I (R1 = Ph; A = p-C6H4).

ST polycarbosilane heat resistance conductor preceramic; platinum catalyst methylsilylbenzene **acetylene** cycloaddn

IT Electric conductors, polymeric  
 (polycarbosilanes; prepn. of heat-resistant doped polycarbosilanes for elec. conductors)

IT Heat-resistant materials  
 (prepn. of heat-resistant polycarbosilanes for preceramics and elec. conductors)

IT Siloxanes and Silicones, preparation  
 RL: **IMF (Industrial manufacture); PREP (Preparation)**  
 (tetrasilaanthracene ring-contg.; prepn. of heat-resistant polycarbosilanes for preceramics and elec. conductors)

IT 7705-08-0, Iron trichloride, uses  
 RL: **MOA (Modifier or additive use); USES (Uses)**  
 (dopant; prepn. of heat-resistant polycarbosilanes for elec. conductors)

IT **150566-64-6P 150566-65-7P 150566-66-8P**  
**163615-69-8P 163615-70-1P 172307-73-2P 172307-74-3P**  
**172307-75-4P 172307-76-5P 172307-77-6P**  
 RL: **IMF (Industrial manufacture); PRP (Properties); PREP (Preparation)**  
 (doped with ferric chloride; prepn. of heat-resistant polycarbosilanes for elec. conductors)

IT 12120-15-9  
 RL: **CAT (Catalyst use); USES (Uses)**  
 (prepn. of heat-resistant polycarbosilanes for preceramics and elec. conductors)

IT **163615-65-4P 172307-78-7P**  
 RL: **IMF (Industrial manufacture); PREP (Preparation)**

(prepn. of heat-resistant polycarbosilanes for preceramics and elec. conductors)

IT 150566-64-6P 150566-65-7P 150566-66-8P  
163615-69-8P 163615-70-1P

RL: IMF (Industrial manufacture); PRP (Properties); PREP  
(Preparation)

(doped with ferric chloride; prepn. of heat-resistant polycarbosilanes for elec. conductors)

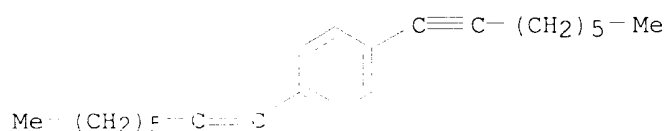
RN 150566-64-6 HCAPLUS

CN Silane, 1,2,4,5-benzenetetrayltetrakis[dimethyl-, polymer with 1,4-di-1-octynylbenzene (9CI) (CA INDEX NAME)

CM 1

CRN 150566-63-5

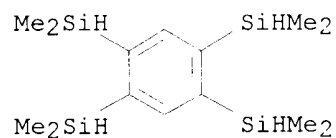
CMF C22 H30



CM 2

CRN 10095-29-1

CMF C14 H30 Si4



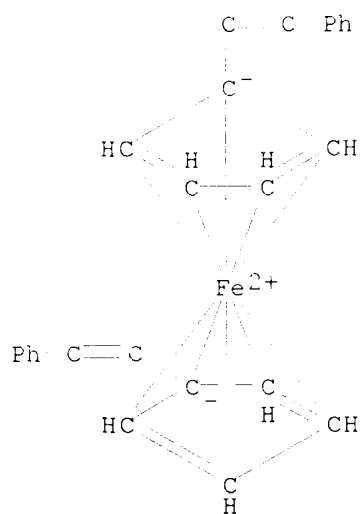
RN 150566-65-7 HCAPLUS

CN Ferrocene, 1,1'-bis(phenylethynyl)-, polymer with 1,2,4,5-benzenetetrayltetrakis[dimethylsilane] (9CI) (CA INDEX NAME)

CM 1

CRN 12100-65-1

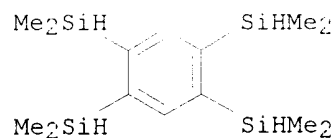
CMF C26 H18 Fe



CM 2

CRN 10095-29-1

CMF C14 H30 Si4



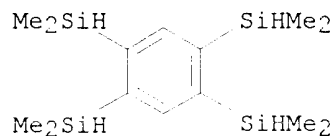
RN 150566-66-8 HCAPLUS

CN Silane, 1,2,4,5-benzenetetraysilane, polymer with  
1,4-bis(phenylethynyl)benzene (9CI) (CA INDEX NAME)

CM 1

CRN 10095-29-1

CMF C14 H30 Si4



CM 2

CRN 1849-27-0

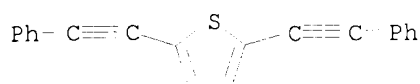
CMF C22 H14



RN 163615-69-8 HCAPLUS  
 CN Silane, 1,2,4,5-benzenetetrayltetrakis(dimethyl-, polymer with  
 2,5-bis(phenylethynyl)thiophene (9CI) (CA INDEX NAME)

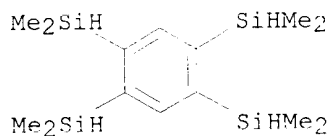
CM 1

CRN 90267-18-8  
 CMF C20 H12 S



CM 2

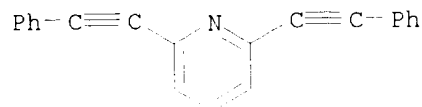
CRN 10095-29-1  
 CMF C14 H30 Si4



RN 163615-70-1 HCAPLUS  
 CN Pyridine, 2,6-bis(phenylethynyl)-, polymer with 1,2,4,5-  
 benzenetetrayltetrakis(dimethylsilane) (9CI) (CA INDEX NAME)

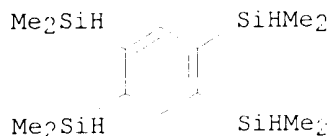
CM 1

CRN 83965-72-4  
 CMF C21 H13 N



CM 2

CRN 10095-29-1  
 CMF C14 H30 Si4



IT 163615-65-4P

RL: IMF (Industrial manufacture); PREP (Preparation)

(prepn. of heat-resistant polycarbosilanes for preceramics and elec. conductors)

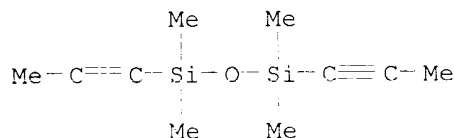
RN 163615-65-4 HCAPLUS

CN Disiloxane, 1,1,3,3-tetramethyl-1,3-di-1-propynyl-, polymer with 1,2,4,5-benzenetetrayltetrakis[dimethylsilane] (9CI) (CA INDEX NAME)

CM 1

CRN 24602-60-6

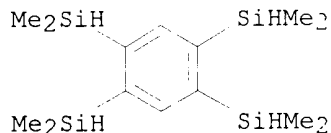
CMF C10 H18 O Si2



CM 2

CRN 10095-29-1

CMF C14 H30 Si4



L34 ANSWER 19 OF 34 HCAPLUS COPYRIGHT 2003 ACS

AN 1995:235197 HCAPLUS

DN 123:144262

TI Preparation of fluorosilyl-containing cyclic organosilicon compounds

IN Ito, Masayoshi; Uchiumi, Tetsuyoshi; Iwata, Kenji; Mitsuzuka, Masahiko; Tanaka, Masato; Uchimar, Juko

PA Mitsui Toatsu Chemicals, Japan; Kogyo Gijutsuin

SC Jpn. Kokai Tokkyo Koho, 4 pp.

CODEN: JKXXAF

DT Patent

LA Japanese

IC ICM C07F007-12

ICA C07B061-00

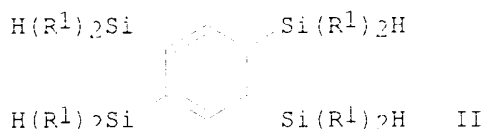
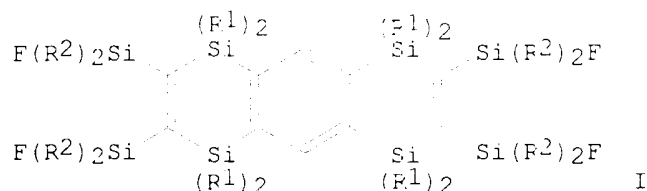
CC 29-6 (Organometallic and Organometalloidal Compounds)



## Section cross-reference(s): 35

FAN.CNT 1

	PATENT NO.	KIND	DATE	APPLICATION NO.	DATE
PI	JP 06247986	A2	19940906	JP 1993-38598	19930226
PRAI	JP 1993-38598		19930226		
OS	CASREACT 123:144262; MAPPAT 123:144262				
GI					



AB The title compds. I [R1-2 = C1-10 alkyl, alkenyl, (lower alkyl-, lower alkenyl-, lower alkoxy-, or halo-substituted) Ph], useful as heat and fire-resistant polymers (no data), are prepd. by reaction of (hydrosilyl)benzenes II (R1 = same as I) with F(R2)2SiC.tplbond.CSi(R2)2F (III; R2 = same as I) in the presence of catalysts. II (R1 = Me) was treated with III (R2 = Me) in PhH in the presence of bis(dibenzylideneacetone)platinum(0) at 80.degree. for 2 h to give 46.3% I (R1-2 = Me).

ST fluorosilyl cyclic organosilicon prepn; hydrosilylbenzene cycloaddn  
**fluorosilylacetylene** catalyst

IT Cycloaddition reaction catalysts  
 Fire-resistant materials  
 Heat-resistant materials

(prepn. of fluorosilyl cyclic organosilicons by cycloaddn. of (hydrosilyl)benzenes with (fluorosilyl)**acetylenes**)

IT 7440-05-3D, Palladium, complexes 7440-18-8D, Ruthenium, complexes  
 35915-79-8, Bis(dibenzylideneacetone)platinum

RL: CAT (Catalyst use); USES (Uses)

(prepn. of fluorosilyl cyclic organosilicons by cycloaddn. of (hydrosilyl)benzenes with (fluorosilyl)**acetylenes**)

IT 159797-25-8P

RL: IMF (Industrial manufacture); SPN (Synthetic preparation); PREP (Preparation)

(prepn. of fluorosilyl cyclic organosilicons by cycloaddn. of (hydrosilyl)benzenes with (fluorosilyl)**acetylenes**)

IT 10095-29-1 156809-39-1

RL: RCT (Reactant); RACT (Reactant or reagent)

(prepn. of fluorosilyl cyclic organosilicons by cycloaddn. of (hydrosilyl)benzenes with (fluorosilyl)**acetylenes**)

IT 10095-29-1

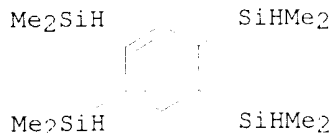
RL: RCT (Reactant); RACT (Reactant or reagent)

(prepn. of fluorosilyl cyclic organosilicons by cycloaddn. of

(hydrosilyl)benzenes with (fluorosilyl)acetylenes)

RN 10095-29-1 HCAPLUS

CN Silane, 1,2,4,5-benzenetetrayltetrakis(dimethyl- (8CI, 9CI) (CA INDEX NAME)



L34 ANSWER 20 OF 34 HCAPLUS COPYRIGHT 2003 ACS

AN 1995:96664 HCAPLUS

DN 122:161798

TI Preparation of cyclic hydrosilylation products of bis- and tetrakis(dimethylsilyl)benzenes and silylenebutadiynylenes

IN Uchimaru, Juko; Tanaka, Masato

PA Kogyo Gijutsuin, Japan

SO Jpn. Kokai Tokkyo Koho, 14 pp.

CODEN: JKXXAF

DT Patent

LA Japanese

IC ICM C07F007-08

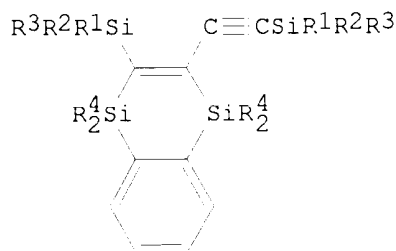
ICS C07F007-18; C08G077-60; H01B001-06

CC 35-8 (Chemistry of Synthetic High Polymers)

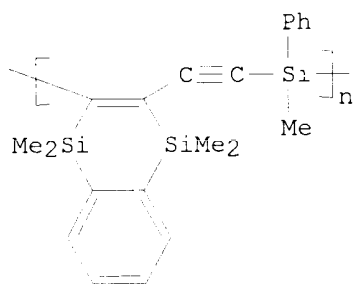
Section cross-reference(s): 38, 57, 76

FAN.CNT 1

	PATENT NO.	KIND	DATE	APPLICATION NO.	DATE
PI	JP 06092972	A2	19940405	JP 1992-266629	19920909
	JP 07053739	B4	19950607		
PRAI	JP 1992-266629		19920909		
OS	MARPAT 122:161798				
GI					



I

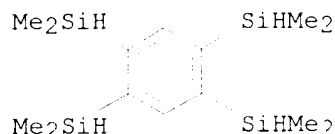


II

AB Compds. I (F1-3 = alkyl, alkoxy, aryl, aralkyl, aryloxy, halo; R4 = lower alkyl) are prep'd. from butadiynes R1SiR2R3C.tplbond.CC.tplbond.CSiR1R2R3 and 1,2-bis(dialkylsilyl)benzenes in the presence of Pt catalysts. Poly(silylenebutadiynylenes) are reacted with 1,2-bis(dialkylsilyl)benzenes in the presence of a Pt catalyst to give polymers which contain units analogous to I and are useful as

heat-resistant or elec. conducting materials or as precursors of ceramic materials. Thus, II (m. 118-123.degree.; wt.-av. mol. wt. 4400; polydispersity 2.0) was prepd. as described above in the presence of  $(H_2C:CH_2)Pt(PPh_3)_2$ . A soln. of 1\* II in toluene was spin coated on glass to give a coating showing elec. cond.  $10^{-8}$  S/cm initially and  $10^{-5}$  S/cm after doping with iodine vapor.

- ST **silylvinylacetylene** deriv prepn **diacetylene** precursor;  
 polysilylenebutadiynylene hydrosilylation polysilylenebutenynylene prepn;  
 silanthracene deriv polysilylenebutenynylene prepn; elec cond  
 polycarbosilane prepn; heat resistance polycarbosilane prepn; ceramic  
 manuf polycarbosilane precursor
- IT Polymerization  
 (of bis(trimethylsilyl)butadiyne for hydrosilylation with bis- and  
 tetrakis(dimethylsilyl)benzenes to give cyclic derivs)
- IT Heat-resistant materials  
 (prepn. of cyclic hydrosilylation products of bis- and  
 tetrakis(dimethylsilyl)benzenes and silylenebutadiynylenes as)
- IT Ceramic materials and wares  
 (prepn. of cyclic hydrosilylation products of bis- and  
 tetrakis(dimethylsilyl)benzenes and silylenebutadiynylenes as  
 precursors of)
- IT Electric conductors  
 (prepn. of cyclic hydrosilylation products of bis- and  
 tetrakis(dimethylsilyl)benzenes and silylenebutadiynylenes for  
 iodine-doped)
- IT Polycarbosilanes  
 RL: **SPN (Synthetic preparation); PREP (Preparation)**  
 (prepn. of cyclic hydrosilylation products of bis- and  
 tetrakis(dimethylsilyl)benzenes with silylenebutadiynylenes)
- IT 4526-07-2, 1,4-Bis(trimethylsilyl)-1,3-butadiyne 128599-09-7  
 128599-15-5  
 RL: RCT (Reactant); RACT (Reactant or reagent)  
 (hydrosilylation with bis(dimethylsilyl)benzene to cyclic deriv.)
- IT **10095-29-1**, 1,2,4,5-Tetrakis(dimethylsilyl)benzene 17985-72-7,  
 1,2-Bis(dimethylsilyl)benzene  
 RL: RCT (Reactant); RACT (Reactant or reagent)  
 (hydrosilylation with bis(trimethylsilyl)butadiyne to cyclic deriv.)
- IT 160053-18-9P  
 RL: **SPN (Synthetic preparation); TEM (Technical or engineered  
 material use); PREP (Preparation); USES (Uses)**  
 (prepn. by cyclic hydrosilylation of bis(dimethylsilyl)benzene with  
 bis(trimethylsilyl)butadiyne)
- IT 160053-19-0P  
 RL: **SPN (Synthetic preparation); TEM (Technical or engineered  
 material use); PREP (Preparation); USES (Uses)**  
 (prepn. by cyclic hydrosilylation of bis(dimethylsilyl)benzene with  
 silylenebutadiynylene group-contg. polymer)
- IT 128599-09-7DP, hydrosilylation products with tetrakis(dimethylsilyl)benzen  
 e 128599-15-5DP, hydrosilylation products with  
 tetrakis(dimethylsilyl)benzene  
 RL: **SPN (Synthetic preparation); PREP (Preparation)**  
 (prepn. of cyclic)
- IT **10095-29-1**, 1,2,4,5-Tetrakis(dimethylsilyl)benzene  
 RL: RCT (Reactant); RACT (Reactant or reagent)  
 (hydrosilylation with bis(trimethylsilyl)butadiyne to cyclic deriv.)
- RN 10095-29-1 HCAPLUS
- CN Silane, 1,2,4,5-benzenetetrayltetrakis(dimethyl- (8CI, 9CI) (CA INDEX  
 NAME)



L34 ANSWER 21 OF 34 HCAPLUS COPYRIGHT 2003 ACS

AN 1995:81035 HCAPLUS

DN 122:315326

TI Bis(1,2-bissilylethylenes) and silicon-containing step ladder polymers and manufacture thereof and materials therefrom

IN Tanaka, Masato; Uchimaru, Juko

PA Kogyo Gijutsuin, Japan

SO Jpn. Kokai Tokkyo Koho, 15 pp.

CODEN: JKXXAF

DT Patent

LA Japanese

IC ICM C07F007-08

ICS B01J031-22; B01J031-24; C08G077-60; H01B001-12

ICA C07B061-00

CC 35-2 (Chemistry of Synthetic High **Polymers**)

Section cross-reference(s): 57, 76

FAN.CNT 1

	PATENT NO.	KIND	DATE	APPLICATION NO.	DATE
PI	JP 05310752	A2	19931122	JP 1992-266627	19920909
	JP 07053738	B4	19950607		
PRAI	JP 1992-56709		19920207		

AB The title compds. are prepd. by reacting 1,2-bis(dimethylsilyl)benzene (I) with **bisacetylenes** or 1,2,4,5-tetrakis(dimethylsilyl)benzene (II) with **acetylenes** in the presence of Pt compds. II polymerizes with **bisacetylenes** to prep. heat-resistant polycarbosilanes for preceramics. Thus, I reacted with 1,4-bis(1-octynyl)benzene to prep. 1,4-bis[2-(5-benzo-1,1,4,4-tetramethyl-3-hexyl-1,4-disilacyclohexa-2,5-dienyl)]benzene.

ST step ladder polymer polycarbosilane; methylsilylbenzene **acetylene** addn reaction; silicon step ladder polymer

IT Ceramic materials and wares  
(Si-contg. ladder polymer precursors)

IT Heat-resistant materials  
(Si-contg. ladder polymers)

IT Semiconductor materials  
(doped Si-contg. ladder polymers)

IT Ladder polymers  
Polycarbosilanes

RL: **IMF (Industrial manufacture)**; TEM (Technical or engineered material use); **PREP (Preparation)**; USES (Uses)  
(for preceramics and heat-resistant materials)

IT Hydrosilylation  
(of dimethylsilylbenzene with **acetylenes**)

IT Alkynes  
RL: RCT (Reactant); RACT (Reactant or reagent)  
(reaction with dimethylsilylbenzene)

IT Polymerization

(addn., tetrakis(dimethylsilyl)benzene with **bisacetylenes**)

IT 7705-08-0, Ferric chloride, uses  
 RL: MOA (Modifier or additive use); USES (Uses)  
 (dopants; doped elec. conductive Si-contg. ladder polymer)

IT 150566-64-6P 150566-65-7P 150566-66-8P  
 163615-65-4P 163615-69-8P 163615-70-1P  
 FL: IMF (Industrial manufacture); TEM (Technical or engineered material use); PREP (Preparation); USES (Uses)  
 (ladder polymer; for preceramics and heat-resistant materials)

IT 150566-74-8P 150566-75-9P 150566-04-1P 163615-66-5P 163615-67-6P  
 163615-68-7P  
 FL: IMF (Industrial manufacture); PREP (Preparation)  
 (manuf. of)

IT 10095-29-1, 1,2,4,5-Tetrakis(dimethylsilyl)benzene  
 FL: RCT (Reactant); RACT (Reactant or reagent)  
 (reaction with **acetylenes**)

IT 17985-72-7, 1,2-Bis(dimethylsilyl)benzene  
 FL: RCT (Reactant); RACT (Reactant or reagent)  
 (reaction with **diacetylenes**)

IT 501-65-5, **Diphenylacetylene** 12100-65-1 24602-60-6  
 83965-72-4 90267-18-8 150566-63-5  
 FL: RCT (Reactant); RACT (Reactant or reagent)  
 (reaction with dimethylsilylbenzene)

IT 150566-64-6P 150566-65-7P 150566-66-8P  
 163615-65-4P 163615-69-8P 163615-70-1P  
 FL: IMF (Industrial manufacture); TEM (Technical or engineered material use); PREP (Preparation); USES (Uses)  
 (ladder polymer; for preceramics and heat-resistant materials)

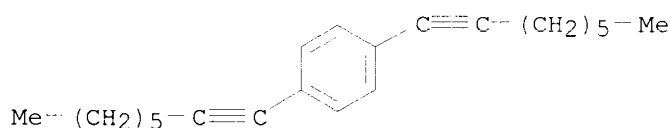
RN 150566-64-6 HCAPLUS

CN Silane, 1,2,4,5-benzenetetrayltetrakis(dimethyl-, polymer with 1,4-di-1-octynylbenzene (9CI) (CA INDEX NAME)

CM 1

CRN 150566-63-5

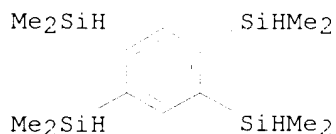
CMF C22 H30



CM 2

CRN 10095-29-1

CMF C14 H30 Si4



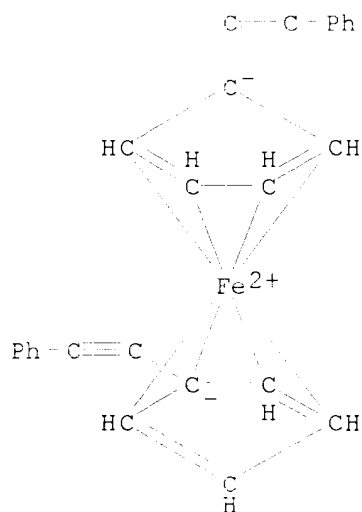
RN 150566-65-7 HCAPLUS

CN Ferrocene, 1,1'-bis(phenylethynyl)-, polymer with 1,2,4,5-benzenetetrayltetrakis(dimethylsilane) (9CI) (CA INDEX NAME)

CM 1

CRN 12100-65-1

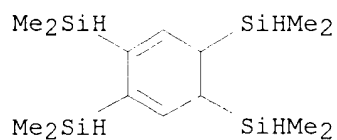
CMF C26 H18 Fe



CM 2

CRN 10095-29-1

CMF C14 H30 Si4



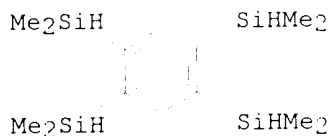
RN 150566-66-8 HCAPLUS

CN Silane, 1,2,4,5-benzenetetrayltetrakis(dimethyl-, polymer with 1,4-bis(phenylethynyl)benzene (9CI) (CA INDEX NAME)

CM 1

CRN 10095-29-1

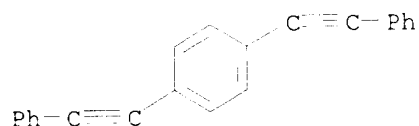
CMF C14 H30 Si4



CM 2

CRN 1849-27-0

CMF C22 H14



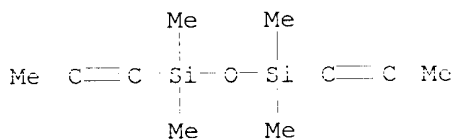
RN 163615-65-4 HCAPLUS

CN Disiloxane, 1,1,3,3-tetramethyl-1,3-di-1-propynyl-, polymer with  
1,2,4,5-benzenetetraysiltetrakis(dimethylsilane) (9CI) (CA INDEX NAME)

CM 1

CRN 24602-60-5

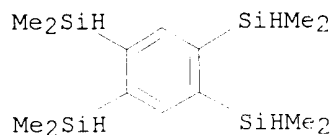
CMF C10 H18 O Si2



CM 2

CRN 10095-29-1

CMF C14 H30 Si4



RN 163615-69-8 HCAPLUS

CN Silane, 1,2,4,5-benzenetetraysiltetrakis(dimethyl-, polymer with  
2,5-bis(phenylethynyl)thiophene (9CI) (CA INDEX NAME)

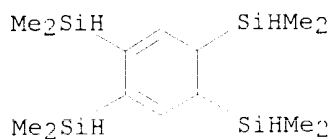
CM 1

CRN 90267-18-8  
CMF C20 H12 S



CM 2

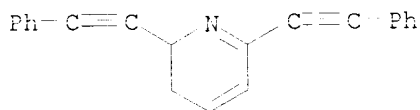
CRN 10095-29-1  
CMF C14 H30 Si4



RN 163615-70-1 HCAPLUS  
CN Pyridine, 2,6-bis(phenylethynyl)-, polymer with 1,2,4,5-benzenetetrayltetrakis[dimethylsilane] (9CI) (CA INDEX NAME)

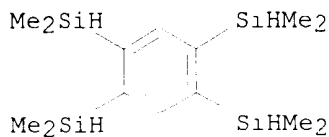
CM 1

CRN 83965-72-4  
CMF C21 H13 N



CM 2

CRN 10095-29-1  
CMF C14 H30 Si4

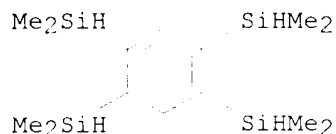


IT 10095-29-1, 1,2,4,5-Tetrakis(dimethylsilyl)benzene  
RL: RCT (Reactant); RACT (Reactant or reagent)  
(reaction with **acetylenes**)

RN 10095-29-1 HCAPLUS  
CN Silane, 1,2,4,5-benzenetetrayltetrakis(dimethyl- (8CI, 9CI) (CA INDEX



NAME)



- L34 ANSWER 22 OF 34 HCAPLUS COPYRIGHT 2003 ACS  
 AN 1994:484125 HCAPLUS  
 DN 121:84125  
 TI Phenylenebis(silanediy) triflates) - new synthetic building blocks for variously structured organosilicon polymers  
 AU Uhlig, Wolfram  
 CS Laboratorium fuer Anorganische Chemie, ETH-Zentrum, Zurich, CH-8092, Switz.  
 SO Helvetica Chimica Acta (1994), 77(4), 972-80  
 CODEN: HCACAV; ISSN: 0018-919X  
 DT Journal  
 LA German  
 CC 35-5 (Chemistry of Synthetic High **Polymers**)  
 Section cross-reference(s): 29  
 AB Ortho-, meta-, and para-substituted phenylenebis(silanediy) triflates) are prepd. as new useful building blocks for the synthesis of polymers with a regular alternating arrangement of an organosilicon unit and a .pi.-electron system (phenylene or ethynylene) in the backbone. Such polymers can be used as photoresists, semiconducting materials or precursors of silicon carbide. The phenylenebis(silanediy) triflates) are obtained by protodesilylation of the corresponding (allylsilyl)- or [(diethylamino)silyl]benzenes with F<sub>3</sub>CSO<sub>3</sub>H. Reactions with dinucleophiles like Li<sub>2</sub>C<sub>2</sub> and Ph<sub>2</sub>Si(OH)<sub>2</sub> lead to variously structured organosilicon polymers, which are characterized by spectroscopic methods.  
 ST phenylene silylene polymer; **polyacetylene** polycarbosilane triflate precursor; siloxane polycarbosilane triflate precursor; triflate precursor polyphenylene polysilylene  
 IT Nuclear magnetic resonance  
 (of phenylenebis(silanediy) triflates) and their polymers)  
 IT Polycarbosilanes  
 RL: **SPN (Synthetic preparation); PREP (Preparation)**  
 (prepn. of, from triflate precursors)  
 IT Polycarbosilanes  
 RL: **SPN (Synthetic preparation); PREP (Preparation)**  
 (**polyacetylene**-, prepn. of, from triflate precursors)  
 IT **Polyacetylenes**, preparation  
 Siloxanes and Silicones, preparation  
 RL: **SPN (Synthetic preparation); PREP (Preparation)**  
 (polycarbosilane-, prepn. of, from triflate precursors)  
 IT Polycarbosilanes  
 RL: **SPN (Synthetic preparation); PREP (Preparation)**  
 (siloxane-, prepn. of, from triflate precursors)  
 IT 106-37-6, p-Dibromobenzene 108-36-1, m-Dibromobenzene 583-53-9, o-Dibromobenzene  
 RL: RCT (Reactant); RACT (Reactant or reagent)  
 (Grignard reaction of, with allyldimethylsilyl chloride)  
 IT 155166-24-8, Diethylaminodimethylsilyl triflate

PL: RCT (Reactant); RACT (Reactant or reagent)  
(Grignard reaction of, with dibromobenzene)

IT 4028-23-3, Allyldimethylsilyl chloride  
RL: RCT (Reactant); RACT (Reactant or reagent)  
(Grignard reaction of, with dibromobenzenes)

IT 74606-84-1, 1,3-Bis(chlorodimethylsilyl)benzene 109756-03-8,  
1,2-Bis(chlorodimethylsilyl)benzene  
RL: USES (Uses)  
(diethylamination of)

IT 27507-78-9P 127808-43-9P 129498-61-9P 156578-33-5P 156578-49-3P  
PL: FRP (Properties); SPN (Synthetic preparation); PREP  
(Preparation)  
(prepn. and NMR spectra of)

IT 32107-86-1P 41205-85-0P 156578-35-7P  
156578-36-8P 156578-37-9P 156578-38-0P  
156578-39-1P 156578-40-4P 156578-42-6P 156578-43-7P  
RL: SPN (Synthetic preparation); PREP (Preparation)  
(prepn. and characterization of)

IT 156578-34-6P 156578-41-5P  
RL: RCT (Reactant); SPN (Synthetic preparation); PREP  
(Preparation); RACT (Reactant or reagent)  
(prepn. and polymn. of)

IT 156578-32-4P  
RL: RCT (Reactant); SPN (Synthetic preparation); PREP  
(Preparation); RACT (Reactant or reagent)  
(prepn. and tosylation of)

IT 136115-96-3P, p-Bis(allyldimethylsilyl)benzene 156578-44-8P,  
m-Bis(allyldimethylsilyl)benzene 156578-45-9P, o-  
Bis(allyldimethylsilyl)benzene 156578-46-0P, 1,4-  
Bis(diethylaminodimethylsilyl)benzene 156578-47-1P, 1,3-  
Bis(diethylaminodimethylsilyl)benzene 156578-48-2P, 1,2-  
Bis(diethylaminodimethylsilyl)benzene  
RL: SPN (Synthetic preparation); PREP (Preparation)  
(prepn. and triflation of)

IT 1493-13-6, Triflic acid  
RL: RCT (Reactant); RACT (Reactant or reagent)  
(reaction of, with arom. disilyl compds.)

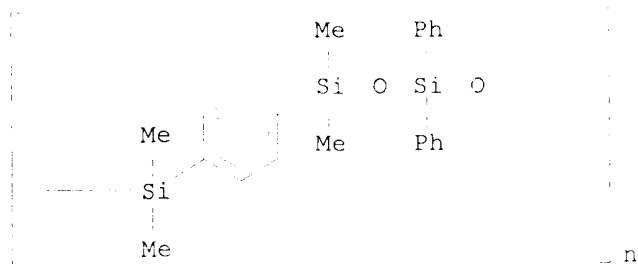
IT 109-89-7, Diethylamine, reactions  
RL: RCT (Reactant); RACT (Reactant or reagent)  
(reaction of, with bis(chlorodimethylsilyl)benzenes)

IT 140438-37-5  
RL: RCT (Reactant); RACT (Reactant or reagent)  
(reaction of, with bis(dimethylsilyl)benzene ditosylate)

IT 18753-27-0, 1,4-Bis(dimethylphenylsilyl)benzene 152306-64-4,  
1,2-Bis(chloromethylphenylsilyl)benzene 152306-65-5,  
1,3-Bis(methylphenylsilyl)benzene  
RL: USES (Uses)  
(triflation of)

IT 41205-85-0P 156578-35-7P 156578-36-8P  
156578-38-0P 156578-39-1P 156578-40-4P  
RL: SPN (Synthetic preparation); PREP (Preparation)  
(prepn. and characterization of)

RN 41205-85-0 HCAPLUS  
CN Poly[oxy(3,3-dimethyl-1,1-diphenyl-1,3-disiloxanedyl)-1,4-  
phenylene(dimethylsilylene)] (9CI) (CA INDEX NAME)



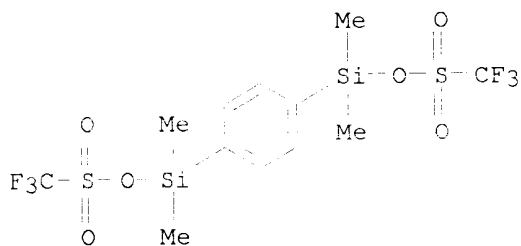
RN 156578-35-7 HCAPLUS

CN Methanesulfonic acid, trifluoro-, 1,4-phenylenebis(dimethylsilylene)  
ester, polymer with lithium acetylide (Li2(C2)) (9CI) (CA INDEX NAME)

CM 1

CRN 156578-34-6

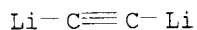
CMF C12 H16 F6 O6 S2 Si2



CM 2

CRN 1070-75-3

CMF C2 Li2



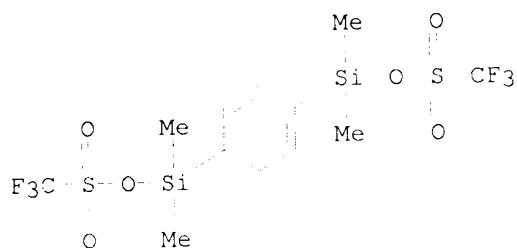
RN 156578-36-8 HCAPLUS

CN Methanesulfonic acid, trifluoro-, 1,4-phenylenebis(dimethylsilylene)  
ester, polymer with 3,3'-dibromo-1,1'-biphenyl (9CI) (CA INDEX NAME)

CM 1

CRN 156578-34-6

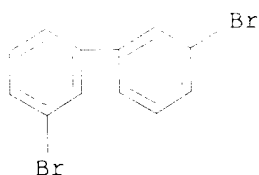
CMF C12 H16 F6 O6 S2 Si2



CM 2

CRN 16400-51-4

CMF C12 H8 Br2



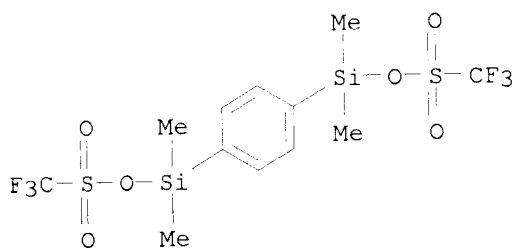
RN 156578-38-0 HCAPLUS

CN Methanesulfonic acid, trifluoro-, 1,4-phenylenebis(dimethylsilylene) ester, polymer with diphenylsilanediol (9CI) (CA INDEX NAME)

CM 1

CRN 156578-34-6

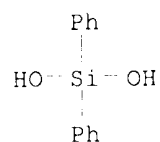
CMF C12 H16 F6 O6 S2 Si2



CM 2

CRN 947-42-2

CMF C12 H12 O2 Si



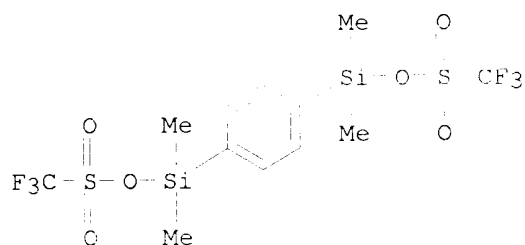
RN 156578-39-1 HCAPLUS

CN Methanesulfonic acid, trifluoro-, 1,4-phenylenebis(dimethylsilylene) ester, polymer with 1,4-benzenediol (9CI) (CA INDEX NAME)

CM 1

CRN 156578-34-6

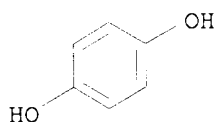
CMF C12 H16 F6 O6 S2 Si2



CM 2

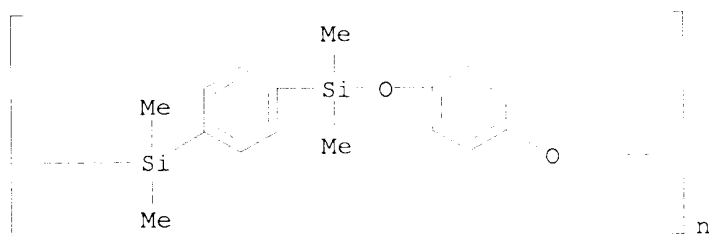
CRN 123-31-9

CMF C6 H6 O2



RN 156578-40-4 HCAPLUS

CN Poly[oxy-1,4-phenyleneoxy(dimethylsilylene)-1,4-phenylene(dimethylsilylene)] (9CI) (CA INDEX NAME)

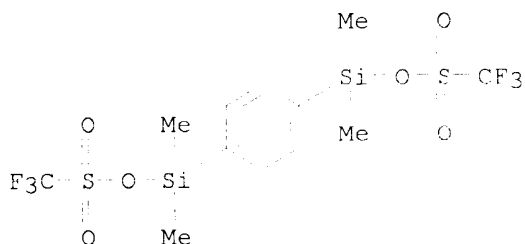


IT 156578-34-6P

RL: RCT (Reactant); **SPN (Synthetic preparation); PREP (Preparation)**; RACT (Reactant or reagent)  
(prepn. and polymn. of)

RN 156578-34-6 HCAPLUS

CN Methanesulfonic acid, trifluoro-, 1,4-phenylenebis(dimethylsilylene) ester  
(9CI) (CA INDEX NAME)



L34 ANSWER 23 OF 34 HCAPLUS COPYRIGHT 2003 ACS

AN 1994:458130 HCAPLUS

DN 121:58130

TI Bis(trifluoromethylsulfonyloxy)organosilicon compounds as synthetic materials for new silicon polymers

AU Uhlig, Wolfram

CS Eidgenoessischen Tech. Hochsch. Zurich, ETH-Zentrum, Zurich, CH-8092, Switz.

SO Chemische Berichte (1994), 127(6), 985-90

CODEN: CHBEAM; ISSN: 0009-2940

DT Journal

LA German

CC 35-5 (Chemistry of Synthetic High **Polymers**)

AB **Polyacetylene**-polysilanes, polycarbosilane-siloxanes, **polyacetylene**-polycarbosilanes, polysilane-siloxanes, and **polyacetylene**-polycarbogermane-polycarbosilanes were obtained by condensation of electrophilic .alpha.,.omega.-bis(trifluoromethylsulfonyloxy)organosilicon compds. with nucleophiles such as organolithium and organomagnesium compds. The required silyl triflate derivs. were prepd. by reaction of the appropriate amino-, allyl-, or phenylsilanes with F3CSO3H.

ST **polyacetylene** polycarbosilane; polycarbosilane siloxane; siloxane polysilane; polycarbogermane **polyacetylene** polycarbosilane; polysilane **polyacetylene**; triflate silyl ester monomer

IT Polycarbosilanes

Polysilanes

RL: PRP (Properties); **SPN (Synthetic preparation); PREP (Preparation)**

(**polyacetylene**-, prepn. and spectra of)

IT Polycarbosilanes

RL: PRP (Properties); **SPN (Synthetic preparation); PREP (Preparation)**

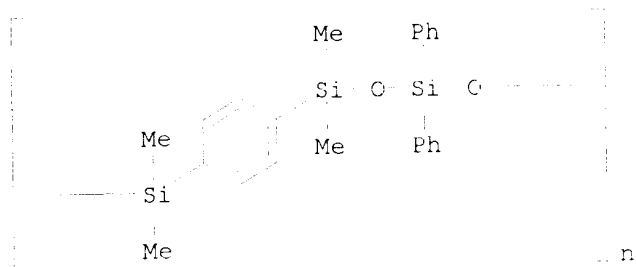
(**polyacetylene**-polycarbogermane-, prepn. and spectra of)

IT **Polyacetylenes**, preparation

RL: PRP (Properties); **SPN (Synthetic preparation); PREP (Preparation)**

(polycarbogermane-polycarbosilane-, prepn. and spectra of)

- IT **Polyacetylenes**, preparation  
Siloxanes and Silicones, preparation  
RL: PRP (Properties); **SPN (Synthetic preparation); PREP (Preparation)**  
(polycarbosilane-, prepn. and spectra of)
- IT **Polyacetylenes**, preparation  
Siloxanes and Silicones, preparation  
RL: PRP (Properties); **SPN (Synthetic preparation); PREP (Preparation)**  
(polysilane-, prepn. and spectra of)
- IT Polycarbosilanes  
Polysilanes  
RL: PRP (Properties); **SPN (Synthetic preparation); PREP (Preparation)**  
(siloxane-, prepn. and spectra of)
- IT 115444-36-5P 154714-09-7P 156054-72-7P 156276-94-7P 156276-96-9P  
RL: RCT (Reactant); **SPN (Synthetic preparation); PREP (Preparation); RACT (Reactant or reagent)**  
(prepn. and polymn. of)
- IT 36960-45-9P 155658-46-1P, Bis[(diethylamino)dimethylsilyl]ethyne  
156054-67-0P, Bis(allyldimethylsilyl)phenylmethane 156276-95-8P  
RL: RCT (Reactant); **SPN (Synthetic preparation); PREP (Preparation); RACT (Reactant or reagent)**  
(prepn. and reaction with triflic acid)
- IT 32107-86-1P **41205-85-0P** 156054-76-1P 156276-97-0P  
156276-98-1P 156276-99-2P 156277-00-8P 156277-01-9P 156277-02-0P  
156277-03-1P 156277-04-2P 156277-05-3P  
RL: PRP (Properties); **SPN (Synthetic preparation); PREP (Preparation)**  
(prepn. and spectra of)
- IT 618-31-5, Benzylidene bromide  
RL: RCT (Reactant); RACT (Reactant or reagent)  
(reaction of, with allylchlorodimethylsilane)
- IT 4028-23-3, Allylchlorodimethylsilane  
RL: RCT (Reactant); RACT (Reactant or reagent)  
(reaction of, with benzylidene bromide)
- IT 947-42-2, Diphenylsilanediol 1070-75-3, Dilithium acetylide  
RL: RCT (Reactant); RACT (Reactant or reagent)  
(reaction of, with diethylamino(dimethyl)silyl triflate)
- IT 155166-24-8  
RL: RCT (Reactant); RACT (Reactant or reagent)  
(reaction of, with lithium acetylide)
- IT 1493-13-6, Triflic acid  
RL: RCT (Reactant); RACT (Reactant or reagent)  
(reaction of, with silanes)
- IT 25149-72-8  
RL: RCT (Reactant); RACT (Reactant or reagent)  
(reaction of, with silyl triflate ester)
- IT 1145-98-8, Tetramethyldiphenyldisilane  
RL: RCT (Reactant); RACT (Reactant or reagent)  
(reaction of, with triflic acid)
- IT **41205-85-0P**  
PL: PRP (Properties); **SPN (Synthetic preparation); PREP (Preparation)**  
(prepn. and spectra of)
- RN 41205-85-0 HCAPLUS
- CN Poly[oxy(3,3-dimethyl-1,1-diphenyl-1,3-disiloxanediyl)-1,4-phenylene(dimethylsilylene)] (9CI) (CA INDEX NAME)



L34 ANSWER 24 OF 34 HCAPLUS COPYRIGHT 2003 ACS  
AN 1994:77815 HCAPLUS  
DN 120:77815  
TI The synthesis and gas-transport properties of some hydrosilylation  
condensation polymers  
AU Rickle, Greg K.  
CS Cent. Res. Adv. Polym. Syst. Lab., Dow Chem. Co., Midland, MI, 48674, USA  
SO Journal of Applied Polymer Science (1994), 51(4), 605-12  
CODEN: JAPNAB; ISSN: 0021-8995  
DT Journal  
LA English  
CC 35-7 (Chemistry of Synthetic High Polymers)  
Section cross-reference(s): 39  
AB High-permeance collection layers are needed in composite membranes but few  
polymers have the required permeability. Hydrosilylation condensation  
polymers, because of their high silicon content, are thought to be good  
candidates to have high permeabilities. Several novel polymers were made  
and a new and simpler synthesis of ethynylated silanes is reported. One  
polymer, poly(divinyldimethylsilane-co-1,4-bis[dimethylsilyl]benzene),  
appears to be of a liq. cryst. nature and has a low oxygen permeability  
(1.10 barrers). Two others, poly(diethynyldimethylsilane-co-1,4-  
bis[dimethylsilyl]benzene) and poly(divinyldimethylsilane-co-  
p,p'diethynylbiphenyl-co-tetramethyldisiloxane), were viscous liqs. that  
could be thermally cured to give elastomers with oxygen permeabilities of  
.apprx.85 barrers.  
ST hydrosilylation polymer membrane gas transport; polycarbosilane membrane  
gas transport oxygen  
IT Polycarbosilanes  
Rubber, synthetic  
RL: SPN (Synthetic preparation); PREP (Preparation)  
(hydrosilylation condensation products, membranes, prepn. and gas  
transport properties of)  
IT Permeability and Permeation  
(of gases in polycarbosilane membranes)  
IT 74-82-8, Methane, properties 124-38-9, Carbon dioxide, properties  
7440-59-7, Helium, properties 7727-37-9, Nitrogen, properties  
7782-44-7, Oxygen, properties  
RL: PRP (Properties)  
(permeability of, in polycarbosilane membranes)  
IT 152725-11-6P 152725-12-7P 152725-13-8P 152725-14-9P  
RL: SPN (Synthetic preparation); PREP (Preparation)  
(prepn. and gas-transport properties of)  
IT 1675-60-1P, Diethynyldimethylsilane  
RL: RCT (Reactant); SPN (Synthetic preparation); PREP (Preparation); RACT



(Reactant or reagent)

(prepn. and polymn. of, with bis(dimethylsilyl)benzene and  
trivinylmethylsilane)

IT 1066-26-8, Sodium acetylide

RL: USES (Uses)

(reaction with dimethyldichlorosilane)

IT 75-78-5, Dimethyldichlorosilane

RL: USES (Uses)

(reaction with sodium acetylide)

IT 152725-13-8P 152725-14-9P

RL: **SPN (Synthetic preparation); PREP (Preparation)**

(prepn. and gas-transport properties of)

RN 152725-13-8 HCAPLUS

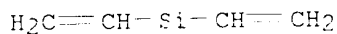
CN Silane, diethynyldimethyl-, polymer with 1,4-phenylenebis[dimethylsilane]  
and triethenylmethylsilane (9CI) (CA INDEX NAME)

CM 1

CRN 18244-95-6

CMF C7 H12 Si

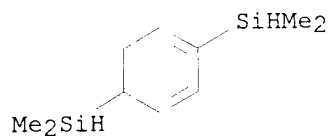
Me



CM 2

CRN 2488-01-9

CMF C10 H18 Si2

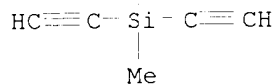


CM 3

CRN 1675-60-1

CMF C6 H8 Si

Me



RN 152725-14-9 HCAPLUS

CN Silane, triethenylmethyl-, polymer with 4,4'-diethynyl-1,1'-biphenyl and 1,4-phenylenebis[dimethylsilane] (9CI) (CA INDEX NAME)

CM 1

CRN 38215-38-2

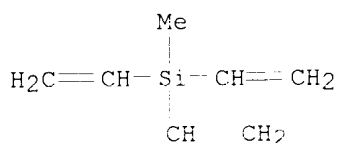
CMF C16 H10



CM 2

CRN 18244-95-6

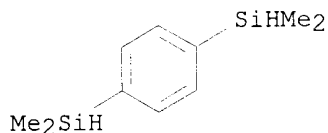
CMF C7 H12 Si



CM 3

CRN 2488-01-9

CMF C10 H18 Si2



L34 ANSWER 25 OF 34 HCAPLUS COPYRIGHT 2003 ACS

AN 1994:55232 HCAPLUS

DN 120:55232

TI Polymeric organosilicon systems. 19. Preparation of branched polymers by selective hydrosilylation of poly[(silylene)but-1,3-diynes]

AU Ishikawa, Mitsuo; Toyoda, Eiji; Horio, Tomoyuki; Kunai, Atsutaka

CS Fac. Eng., Hiroshima Univ., Higashi-Hiroshima, 724, Japan

SO Organometallics (1994), 13(1), 26-7

CODEN: ORGND7; ISSN: 0276-7333

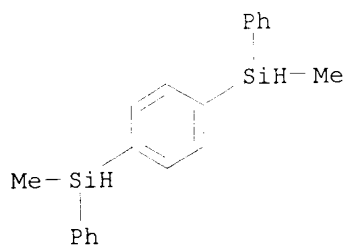
DT Journal

LA English

CC 35-8 (Chemistry of Synthetic High **Polymers**)

AB The reaction of poly[(dimethylsilylene, methylphenylsilylene, and diethylsilylene)but-1,3 diyne] with 1,4-bis(methylphenylsilyl)benzene in

- the presence of a catalytic amt. of Rh6(CO)16 afforded the resp. branched polymers with high mol. wts. in high yields.
- ST polysilane **polyacetylene** crosslinking functionalization
- IT Crosslinking  
(of **polyacetylene**-polysilane)
- IT Polysilanes  
RL: RCT (Reactant); RACT (Reactant or reagent)  
(**polyacetylene**-, crosslinking of, with silanes)
- IT **Polyacetylenes**, reactions  
RL: RCT (Reactant); RACT (Reactant or reagent)  
(polysilane-, crosslinking of, with silanes)
- IT 128599-08-6P 128599-09-7P 140391-19-1P  
RL: **SPN (Synthetic preparation); PREP (Preparation)**  
(crosslinked, prepn. and characterization and soly. of)
- IT **3902-54-3**  
RL: USES (Uses)  
(crosslinking of **polyacetylene**-polysilane with)
- IT 617-86-7DP, Triethylsilane, reaction products with  
poly[(dimethylsilylene)butadiyne] 128599-08-6DP, reaction products with  
triethylsilane  
RL: **SPN (Synthetic preparation); PREP (Preparation)**  
(prepn. and characterization and soly. of)
- IT **3902-54-3**  
RL: USES (Uses)  
(crosslinking of **polyacetylene**-polysilane with)
- RN 3902-54-3 HCAPLUS
- CN Silane, 1,4-phenylenebis[methylphenyl- (9CI) (CA INDEX NAME)



- L34 ANSWER 26 OF 34 HCAPLUS COPYRIGHT 2003 ACS
- AN 1993:581348 HCAPLUS
- DN 119:181348
- TI Platinum complex-catalyzed polycondensation of  
tetrakis(dimethylsilyl)benzene with diynes. Synthesis of thermally stable  
and conducting polymers
- AU Uchimaru, Yuko; Brandl, Paul; Tanaka, Masato; Goto, Midori
- CS Natl. Chem. Lab. Ind., Tsukuba, 305, Japan
- SO Journal of the Chemical Society, Chemical Communications (1993), (9),  
744-5  
CODEN: JCCCAT; ISSN: 0022-4936
- DT Journal
- LA English
- CC 35-4 (Chemistry of Synthetic High **Polymers**)  
Section cross-reference(s): 76
- AB Dehydrogenative double silylation cyclopolymn. of diynes with  
1,2,4,5-tetrakis(dimethylsilyl)benzene in the presence of a catalytic amt.

of (ethylene)bis(triphenylphosphine)platinum gives new silicon-based polymers, which show high thermal stability and cond. upon doping.

ST tetrasilylbenzene cyclopolymn diyne

IT Polymers, preparation  
RL: **SPN (Synthetic preparation); PREP (Preparation)**  
(heterocyclic silicon-based, prepn. and elec. cond. of doped)

IT Electric conductivity and conduction  
(of silicon heterocyclic polymers doped with ferric chloride)

IT Crystal structure  
(of tricyclic silicon heterocycle)

IT Polymerization  
(cyclo-, dehydrogenation, of **diacetylenes** with tetrakis(dimethylsilyl)benzene)

IT Polymerization catalysts  
(cyclo-, dehydrogenation, platinum complex, for **diacetylenes** with tetrakis(dimethylsilyl)benzene)

IT 12120-15-9, (Ethylene)bis(triphenylphosphine)platinum  
RL: CAT (Catalyst use); USES (Uses)  
(catalysts, for reaction of **diacetylenes** with dimethylsilylbenzenes)

IT 7705-08-0, Ferric chloride, properties  
RL: PRP (Properties)  
(elec. cond. of silicon heterocyclic polymers doped with)

IT 150566-75-9P  
RL: PRP (Properties); **SPN (Synthetic preparation); PREP (Preparation)**  
(prepn. and crystal structure of)

IT **150566-64-6P 150566-65-7P 150566-66-8P**  
RL: **SPN (Synthetic preparation); PREP (Preparation)**  
(prepn. and elec. cond. of doped)

IT 150566-74-8P 150622-04-1P  
RL: **SPN (Synthetic preparation); PREP (Preparation)**  
(prepn. of, from **diacetylene** and bis(dimethylsilyl)benzene)

IT **2488-01-9**, p-Bis(dimethylsilyl)benzene  
RL: RCT (Reactant); RACT (Reactant or reagent)  
(reaction of, **diacetylenes**)

IT 12100-65-1, 1,1'-Bis(phenylethynyl)ferrocene 150566-63-5  
RL: RCT (Reactant); RACT (Reactant or reagent)  
(reaction of, with bis(dimethylsilyl)benzene)

IT **10095-29-1**, 1,2,4,5-Tetrakis(dimethylsilyl)benzene  
RL: RCT (Reactant); RACT (Reactant or reagent)  
(reaction of, with **diphenylacetylene**)

IT 501-65-5, **Diphenylacetylene**  
RL: RCT (Reactant); RACT (Reactant or reagent)  
(reaction of, with tetrakis(dimethylsilyl)benzene)

IT **150566-64-6P 150566-65-7P 150566-66-8P**  
RL: **SPN (Synthetic preparation); PREP (Preparation)**  
(prepn. and elec. cond. of doped)

RN 150566-64-6 HCAPLUS

CN Silane, 1,2,4,5-benzenetetrayltetrakis(dimethyl-, polymer with 1,4-di-1-octynylbenzene (9CI) (CA INDEX NAME)

CM 1

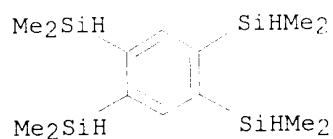
CRN 150566-63-5

CMF C22 H30



CM 2

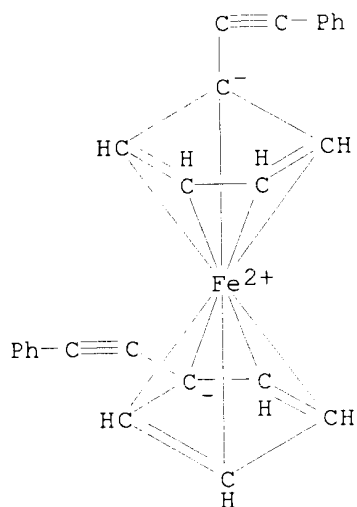
CRN 10095-29-1  
CMF C14 H30 Si4



RN 150566-65-7 HCAFLUS  
CN Ferrocene, 1,1'-bis(phenylethynyl)-, polymer with 1,2,4,5-benzenetetrayltetrakis(dimethylsilane) (9CI) (CA INDEX NAME)

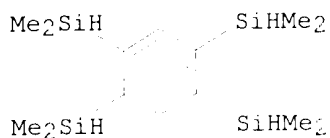
CM 1

CRN 12100-65-1  
CMF C26 H18 Fe



CM 2

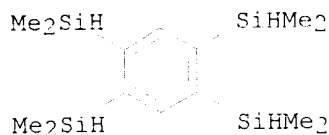
CRN 10095-29-1  
CMF C14 H30 Si4



RN 150566-66-8 HCAPLUS  
 CN Silane, 1,2,4,5-benzenetetraysilane (9CI) (CA INDEX NAME)

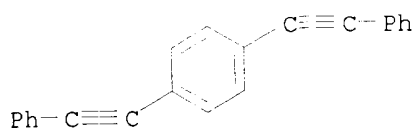
CM 1

CRN 10095-29-1  
 CMF C14 H30 Si4

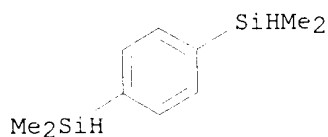


CM 2

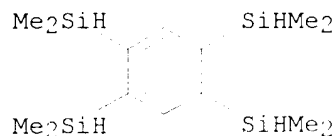
CRN 1849-27-0  
 CMF C22 H14



IT **2488-01-9**, p-Bis(dimethylsilyl)benzene  
 RL: RCT (Reactant); RACT (Reactant or reagent)  
 (reaction of, **diacetylenes**)  
 RN 2488-01-9 HCAPLUS  
 CN Silane, 1,4-phenylenebis(dimethyl- (9CI) (CA INDEX NAME)



IT **10095-29-1**, 1,2,4,5-Tetrakis(dimethylsilyl)benzene  
 RL: RCT (Reactant); RACT (Reactant or reagent)  
 (reaction of, with **diphenylacetylene**)  
 RN 10095-29-1 HCAPLUS  
 CN Silane, 1,2,4,5-benzenetetraysilane (8CI, 9CI) (CA INDEX NAME)



L34 ANSWER 27 OF 34 HCAPLUS COPYRIGHT 2003 ACS

AN 1992:129153 HCAPLUS

DN 116:129153

TI {eta-6-(Organosilyl)arene}chromium tricarbonyl complexes: synthesis, characterization, and electrochemistry

AU Moran, Moises; Cuadrado, Isabel; Pascual, Maria Carmen; Casado, Carmen Maria; Losada, Jose

CS Fac. Cienc., Univ. Auton. Madrid, Madrid, 28049, Spain

SO Organometallics (1992), 11(3), 1210-20

CODEN: ORGND7; ISSN: 0276-7333

DT Journal

LA English

CC 29-11 (Organometallic and Organometalloidal Compounds)

Section cross-reference(s): 35, 72

AB The synthesis of the complexes [eta-6-PhSi(OEt)3]Cr(CO)3 (1), [eta-6-PhSiMe(OMe)2]Cr(CO)3 (2), [eta-6-C6H2(CH2)2Si(OMe)3]Cr(CO)3 (3), [eta-6-1,4-C6H4[(CH2)2Si(OMe)3]2]Cr(CO)3 (4), [eta-6-PhSi(Me)2H]Cr(CO)3 (5), [eta-6-1,4-C6H4[Si(Me)2H]2]Cr(CO)3 (6), [eta-6-PhSi(Me)2CH:CH2]Cr(CO)3 (7), and [eta-6-PhSiMe(NMe2)2]Cr(CO)3 (8) is described. The compds. were prep'd. by direct thermal reaction of the (organosilyl)arene either with Cr(CO)6 (in refluxing di-Bu ether-THF soln.) or from (MeCN)3Cr(CO)3 in cyclohexane. Alternatively, some of these complexes can be obtained by reaction of the (eta-6-lithiobenzene)- or (eta-6-1,4-dilithiobenzene)Cr(CO)3 derivs. with the appropriate chlorosilane in THF at low temp. Photochem. reactions of these tricarbonyl complexes with tri-Bu phosphite in cyclohexane at room temp. afford the corresponding dicarbonyl-monosubstituted [eta-6-(organosilyl)arene]Cr(CO)2[P(OBu)3] complexes. The (alkoxysilyl)arene derivs. 1-4 were covalently linked to silica supports. New [(siloxanyl)arene]Cr(CO)3 polymers [-SiMe[eta-6-C6H5]Cr(CO)3OSiMe2(1,4-C6H4)SiMe2O-]n, [-CH2CH[eta-6-C6H5SiMe2]Cr(CO)3-]n, and [-SiMe2[eta-6-1,4-C6H4]Cr(CO)3SiMe2(CH2)2SiMe2O Si(CH2)2-]n as well as the dinuclear model compd. [eta-6-PhSiMe2(CH2)2SiMe2-]2O[Cr(CO)3]2 were prep'd. either by condensation or addn. polymn. reactions from the monomers with the reactive Si(NMe2)2, SiCH:CH2, and SiH groups. The oxidn. of the [eta-6-(organosilyl)arene]Cr(CO)3 complexes was studied by electrochem. and spectroelectrochem. (IR and EPR) techniques. The results show that the stability of the oxidn. products is very dependent upon the solvent and ring substituents. An electrochem. induced process exhibiting curve crossing was obsd. when the oxidn. was effected in the presence of P(OBu)3 in dichloromethane or propylene carbonate. Chem. modification of platinum electrodes via silanization was studied with the alkoxysilane complexes 1-4.

ST chromium silylarene tricarbonyl prepn electrochem; silylbenzene chromium carbonyl prepn electrochem; polymn catalyst silylarenechromium carbonyl; electrochem oxidn silylarenechromium carbonyl

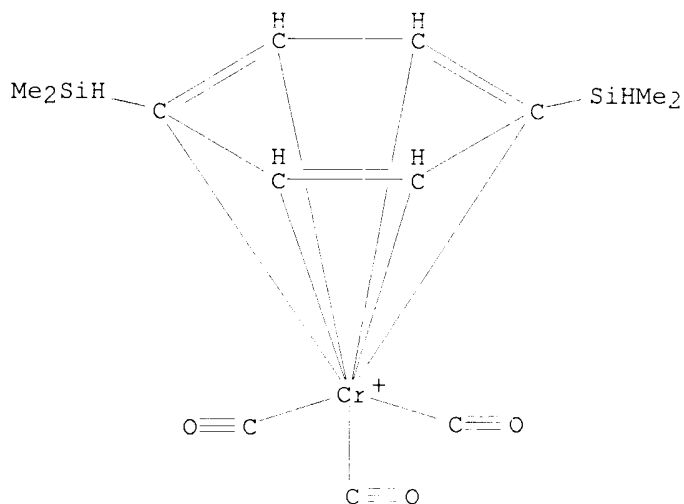
IT Polymerization catalysts

([(organosilyl)arene]chromium carbonyls, for phenylacetylene)

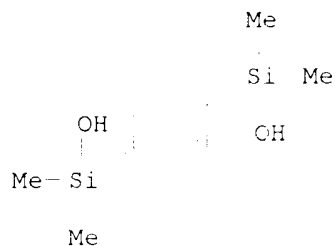
- IT Oxidation, electrochemical  
(of [(organosilyl)arene]chromium carbonyls)
- IT Substitution reaction, coordinative  
(of [(organosilyl)arene]chromium tricarbonyls with tri-Bu phosphite)
- IT 102-85-2, Tributyl phosphite  
RL: RCT (Reactant); RACT (Reactant or reagent)  
(electrochem. oxidn. of (silylarene)chromium tricarbonyls in presence of)
- IT 138814-02-5P **138834-40-9P**  
RL: PRP (Properties); **PREP (Preparation)**  
(formation and ESR spectrum of)
- IT 138814-01-4P  
RL: PRP (Properties); **PREP (Preparation)**  
(formation and IR spectrum of)
- IT 115775-85-4P  
RL: RCT (Reactant); **PREP (Preparation)**; RACT (Reactant or reagent)  
(formation and silylation of, with chlorodimethylsilane)
- IT 2627-95-4  
RL: PCT (Reactant); RACT (Reactant or reagent)  
(hydrosilylation reaction of, with (silylbenzene)chromium tricarbonyl)
- IT 12082-08-5  
RL: RCT (Reactant); RACT (Reactant or reagent)  
(lithiation of arene ligand and subsequent silylation of)
- IT **2754-32-7**, 1,4-Bis(hydroxydimethylsilyl)benzene  
RL: PCT (Reactant); RACT (Reactant or reagent)  
(polycondensation reaction of, with (silylbenzene)chromium tricarbonyl)
- IT 536-74-3, **Phenylacetylene**  
RL: RCT (Reactant); RACT (Reactant or reagent)  
(polymn. of, (silylarene)chromium carbonyl catalysts for)
- IT 137779-62-5DP, silica-supported deriv. 138813-88-4DP, silica-supported deriv. 138813-89-5DP, silica-supported deriv. 138813-90-8DP, silica-supported deriv.  
RL: **SPN (Synthetic preparation)**; **PREP (Preparation)**  
(prepn. and catalytic polymn. by, of **phenylacetylene**)
- IT 138813-93-1P 138813-94-2P 138813-95-3P 138813-96-4P  
**138813-97-5P** 138813-98-6P 138813-99-7P 138814-00-3P  
138814-03-6P **138814-04-7P** 138814-05-8P 138834-39-6P  
RL: RCT (Reactant); **SPN (Synthetic preparation)**; **PREP (Preparation)**; RACT (Reactant or reagent)  
(prepn. and electrochem. oxidn. of)
- IT 25038-69-1P  
RL: **SPN (Synthetic preparation)**; **PREP (Preparation)**  
(prepn. of, by polymn. catalyzed by silica-supported (silylarene)chromium carbonyls)
- IT 137779-62-5P 138813-88-4P 138813-89-5P 138813-90-8P  
RL: **SPN (Synthetic preparation)**; **PREP (Preparation)**  
(prepn., photosubstitution with phosphite, catalytic polymn. of **phenylacetylene**, and electrochem. oxidn. of)
- IT 138813-91-9P  
RL: **SPN (Synthetic preparation)**; **PREP (Preparation)**  
(prepn., photosubstitution with phosphite, homopolymn., and electrochem. oxidn. of)
- IT **75830-40-9P** 122780-39-6P  
RL: **SPN (Synthetic preparation)**; **PREP (Preparation)**  
(prepn., photosubstitution with phosphite, hydrosilylation, and electrochem. oxidn. of)
- IT 138813-92-0P



- RL: **SPN (Synthetic preparation); PREP (Preparation)**  
 (prepn., photosubstitution with phosphite, polycondensation with bis(hydroxydimethylsilyl)benzene, and electrochem. oxidn. of)
- IT 1066-35-9, Chlorodimethylsilane  
 RL: RCT (Reactant); RACT (Reactant or reagent)  
 (silylation by, of (dilithiobenzene)chromium tricarbonyl)
- IT 10339-02-3  
 RL: RCT (Reactant); RACT (Reactant or reagent)  
 (silylation by, of (lithiobenzene)chromium tricarbonyl)
- IT 13007-92-6, Chromiumhexacarbonyl  
 RL: PROC (Process)  
 (substitution of, with silylarenes)
- IT 766-77-8 780-69-8, Triethoxyphenylsilane **2488-01-9** 3027-21-2  
 33567-83-8 49539-88-0 60354-74-7  
 RL: RCT (Reactant); RACT (Reactant or reagent)  
 (substitution reaction of, with chromium hexacarbonyl)
- IT 16800-46-7, Tris(acetonitrile)tricarbonylchromium  
 RL: RCT (Reactant); RACT (Reactant or reagent)  
 (substitution reaction of, with dimethylphenylvinylsilane)
- IT 18243-27-1  
 RL: RCT (Reactant); RACT (Reactant or reagent)  
 (substitution reaction of, with tris(acetonitrile)tricarbonylchromium)
- IT 115775-36-5  
 RL: RCT (Reactant); RACT (Reactant or reagent)  
 (transmetalation of, with butyllithium)
- IT **138834-40-9P**  
 RL: PRP (Properties); **PREP (Preparation)**  
 (formation and ESR spectrum of)
- RN 138834-40-9 HCAPLUS  
 CN Chromium(1+), tricarbonyl[(.eta.6-1,4-phenylene)bis(dimethylsilane)]-  
 (9CI) (CA INDEX NAME)



- IT **2754-32-7**, 1,4-Bis(hydroxydimethylsilyl)benzene  
 RL: RCT (Reactant); RACT (Reactant or reagent)  
 (polycondensation reaction of, with (silylbenzene)chromium tricarbonyl)
- RN 2754-32-7 HCAPLUS  
 CN Silanol, 1,4-phenylenebis(dimethyl- (9CI) (CA INDEX NAME)

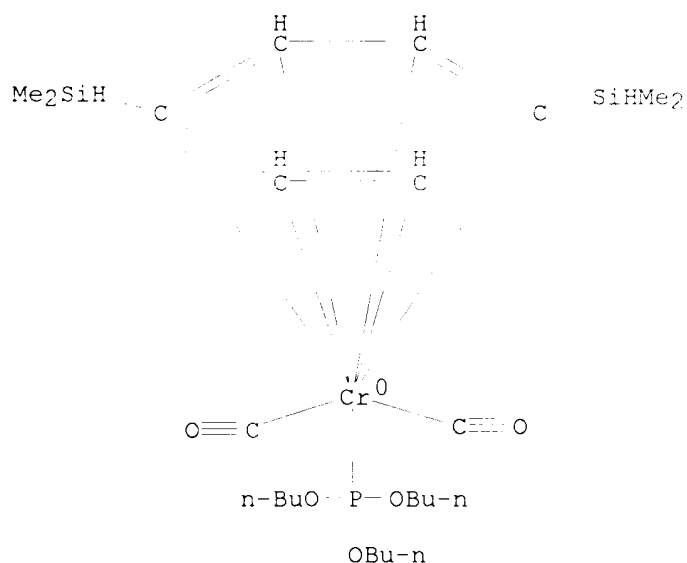


IT 138813-97-5P 138814-04-7P

RL: RCT (Reactant); SPN (Synthetic preparation); PREP  
 (Preparation); RACT (Reactant or reagent)  
 (prepn. and electrochem. oxidn. of)

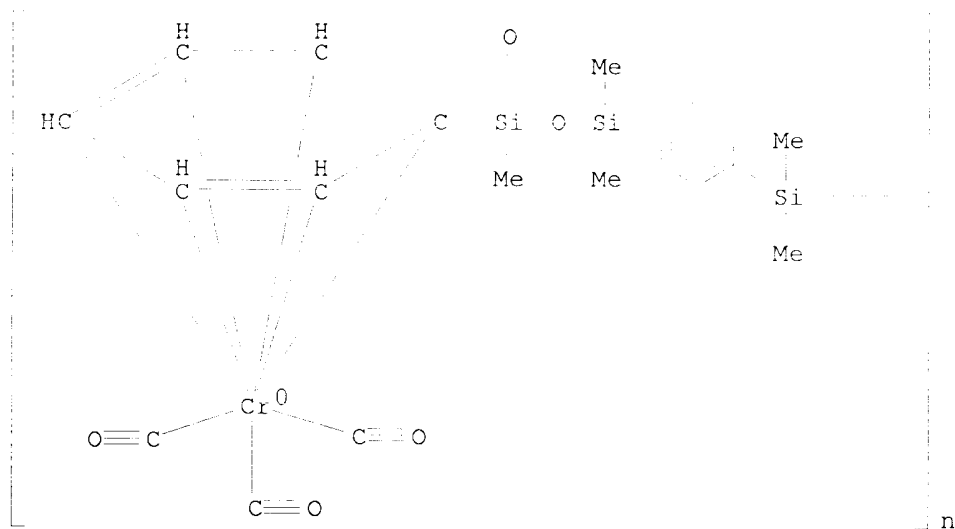
RN 138813-97-5 HCAPLUS

CN Chromium, dicarbonyl[(.eta.6-1,4-phenylene)bis(dimethylsilane)](tributyl phosphite-P)- (9CI) (CA INDEX NAME)



RN 138814-04-7 HCAPLUS

CN Poly[oxy(1,3,3-trimethyl-1-phenyl-1,3-disiloxanediyl)-1,4-phenylene(dimethylsilylene) tricarbonylchromium complex] (9CI) (CA INDEX NAME)

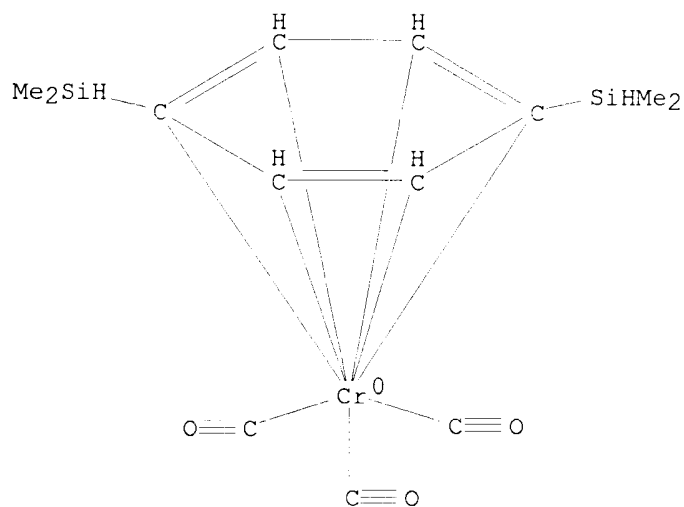


IT 75830-40-9P

RL: SPN (Synthetic preparation); PREP (Preparation)

(prepn., photosubstitution with phosphite, hydrosilylation, and electrochem. oxidn. of)

RN 75830-40-9 HCAPLUS

CN Chromium, tricarbonyl[(.eta.6-1,4-phenylene)bis(dimethylsilane)]- (9CI)  
(CA INDEX NAME)

IT 2488-01-9

RL: RCT (Reactant); RACT (Reactant or reagent)

(substitution reaction of, with chromium hexacarbonyl)

RN 2488-01-9 HCAPLUS

CN Silane, 1,4-phenylenebis(dimethyl- (9CI) (CA INDEX NAME)



- L34 ANSWER 28 OF 34 HCAPLUS COPYRIGHT 2003 ACS  
 AN 1990:532954 HCAPLUS  
 DN 113:132954  
 TI Liquid crystal polymers from swallow-tailed mesogens  
 AU Cabrera, Ivan; Ringsdorf, Helmut; Ebert, Martina; Wendorff, Joachim H.  
 CS Inst. Org. Chem., Univ. Mainz, Mainz, D-6500, Germany  
 SO Liquid Crystals (1990), 8(2), 163-70  
 CODEN: LICRE6; ISSN: 0267-9292  
 DT Journal  
 LA English  
 CC 35-5 (Chemistry of Synthetic High **Polymers**)  
 Section cross-reference(s): 75  
 AB Swallow-tailed compds. contg. an **acetylenic** unit were  
 synthesized. Only those compds. with a 3-ring structure exhibited  
 liq.-cryst. phases. The Pt-catalyzed addn. of these monomers to compds.  
 contg. Si-H groups was used to synthesize polymeric materials. Only those  
 polymers with the tetramethyldisiloxane unit showed mesophases. The  
 synthesis, characterization, and phase behavior are described.  
 ST liq cryst **polyacetylene** swallow tail; siloxane  
**polyacetylene** liq crystal  
 IT Polymerization  
 (of **diacetylenes** contg. attached mesogen groups with disilane  
 or disiloxanes)  
 IT Liquid crystals  
 (polyacetylene-siloxanes contg. attached mesogen groups)  
 IT Siloxanes and Silicones, preparation  
 RL: PRP (Properties); **SPN (Synthetic preparation); PREP**  
**(Preparation)**  
 (polyacetylene-, prepn. and liq. cryst. properties of)  
 IT **Polyacetylenes**, preparation  
 RL: PRP (Properties); **SPN (Synthetic preparation); PREP**  
**(Preparation)**  
 (siloxane-, prepn. and liq. cryst. properties of)  
 IT 123-08-0, 4-Hydroxybenzaldehyde  
 RL: USES (Uses)  
 (condensation of, with dipropynyl malonate)  
 IT 15872-41-0 59662-47-4 65355-30-8 65355-33-1  
 RL: RCT (Reactant); RACT (Reactant or reagent)  
 (esterification of, with dipropynyl hydroxybenzylidenemalonate)  
 IT 107-19-7, 2-Propyn-1-ol  
 RL: RCT (Reactant); RACT (Reactant or reagent)  
 (esterification of, with malonyl chloride)  
 IT 1663-67-8, Malonic acid dichloride  
 RL: RCT (Reactant); RACT (Reactant or reagent)  
 (esterification of, with propynol)  
 IT 71387-28-5P  
 RL: **SPN (Synthetic preparation); PREP (Preparation)**  
 (prepn. and condensation of, with hydroxybenzaldehyde)  
 IT 129398-60-3P

RL: RCT (Reactant); SPN (Synthetic preparation); PREP (Preparation); RACT (Reactant or reagent) (prepn. and esterification of, with mesogenic acids)

IT 129458-05-5P 129458-06-6P 129458-07-7P 129458-08-8P 129458-09-9P  
129458-10-2P 129520-24-7P 129520-25-8P 129520-26-9P

PL: PRP (Properties); SPN (Synthetic preparation); PREP (Preparation)

(prepn. and liq. cryst. properties of)

IT 129398-61-4P 129398-62-5P 129398-63-6P 129398-64-7P

PL: RCT (Reactant); SPN (Synthetic preparation); PREP (Preparation); RACT (Reactant or reagent)

(prepn. and polymn. of, with disilane or disiloxane derivs.)

IT 129458-10-2P 129520-26-9P

PL: PRP (Properties); SPN (Synthetic preparation); PREP (Preparation)

(prepn. and liq. cryst. properties of)

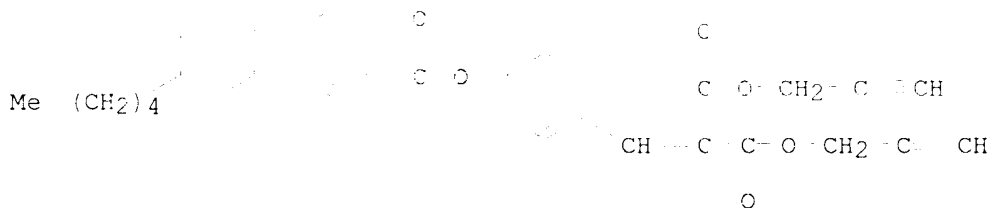
RN 129458-10-2 HCAPLUS

CN Propanedioic acid, [[4-[[[(4'-pentyl[1,1'-biphenyl]-4-yl)carbonyl]oxy]phenyl]methylene]-, di-2-propynyl ester, polymer with 1,4-phenylenebis(dimethylsilane) (9CI) (CA INDEX NAME)

CM 1

CRN 129398-63-6

CMF C34 H30 O6



CM 2

CRN 2438-01-9

CMF C10 H18 Si2



RN 129520-26-9 HCAPLUS

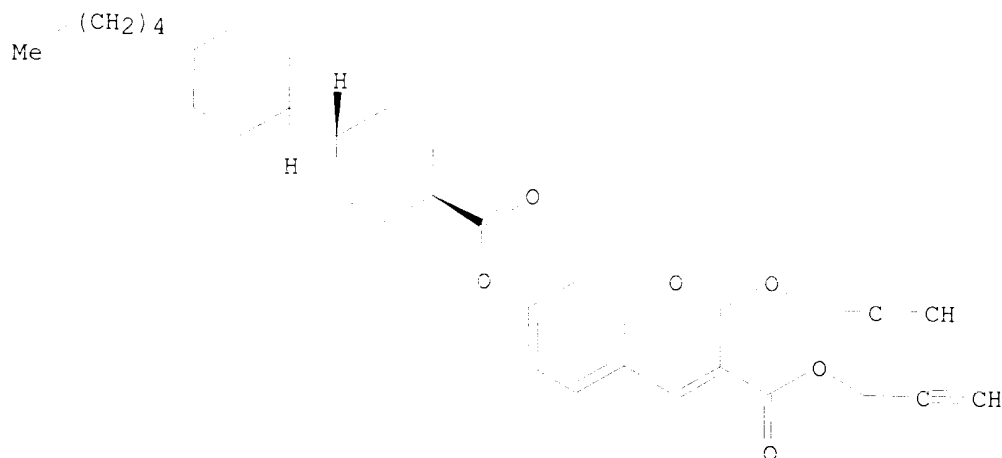
CN Propanedioic acid, [[4-[[[(4'-pentyl[1,1'-bicyclohexyl]-4-yl)carbonyl]oxy]phenyl]methylene]-, di-2-propynyl ester, [trans(trans)]-, polymer with 1,4-phenylenebis(dimethylsilane) (9CI) (CA INDEX NAME)

CM 1

CRN 129398-64-7

CMF C34 H42 O6

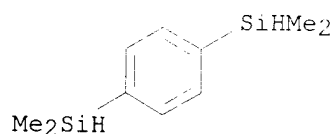
Relative stereochemistry.



CM 2

CRN 2488-01-9

CMF C10 H18 Si2



L34 ANSWER 29 OF 34 HCAPLUS COPYRIGHT 2003 ACS  
 AN 1978:406357 HCAPLUS  
 DN 89:6357  
 TI Action of 1,4-bis(dimethylsilyl)benzene on secondary acetylenic carbinols  
 AU Gverdtsiteli, I. M.; Doksoopulo, T. P.; Gorelashvili, N. P.  
 CS Tbilis. Gos. Univ., Tiflis, USSR  
 SO Tezisy Dokl. - Vses. Konf. Khim. Atsetilena, 5th (1975), 176 Publisher:  
 "Metsniereba", Tiflis, USSR.  
 CODEN: 37NAAL  
 DT Conference  
 LA Russian  
 CC 29-6 (Organometallic and Organometalloidal Compounds)  
 AB Reaction of MeCH(OH)C.tplbond.CH with p-(Me2HSi)2C6H4 (I) in presence of  
 Spiers catalyst gave p-[[Me(HO)CHCH:CH]Me2Si]2C6H4. Similar reaction of  
 PhCH(OH)C.tplbond.CH with I gave p-[(HC.tplbond.CCHPhO)Me2Si]2C6H4. Minor  
 ams. of the corresponding p-[(RCOCH:CH)Me2Si]2C6H4 and  
 p-[[R(HO)CH2CH2]Me2Si]2C6H4 (R = Me, Ph) were also formed in each case.  
 ST benzene disilyl acetylenic carbinol reaction; acetylenic carbinol  
 disilylbenzene reaction; silane hydroxybutenyl phenylenedi;  
 propynyloxysilane phenylenedi  
 IT 62170-46-1P **62170-47-2P** 62170-49-4P 62170-50-7P

62170-51-8P 66727-42-2P

RL: **SPN (Synthetic preparation); PREP (Preparation)**  
(prepn. of)

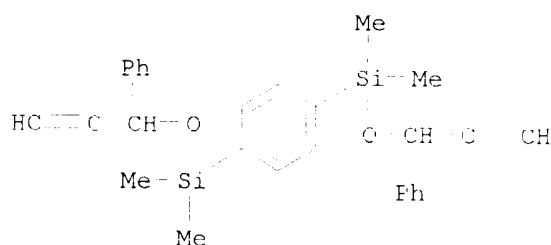
IT 2028-63-9 4187-87-5

RL: RCT (Reactant); RACT (Reactant or reagent)  
(reaction of, with 1,4 bis(dimethylsilyl)benzene)

IT 2488-01-9

PL: RCT (Reactant); RACT (Reactant or reagent)  
(reaction of, with acetylenic carbinols)IT **62170-47-2P**RL: **SPN (Synthetic preparation); PREP (Preparation)**  
(prepn. of)

RN 62170-47-2 HCAPLUS

CN Silane, 1,4-phenylenebis[dimethyl[(1-phenyl-2-propynyl)oxy]- (9CI) (CA  
INDEX NAME)

L34 ANSWER 30 OF 34 HCAPLUS COPYRIGHT 2003 ACS

AN 1977:121423 HCAPLUS

DN 86:121423

TI Reaction of 1,4-bis(dimethylsilyl)benzene with secondary acetylenic carbinols

AU Gverdtsiteli, I. M.; Doksopulo, T. P.; Gorelashvili, N. P.; Andronikashvili, G. G.

CS USSR

SO Zhurnal Obshchei Khimii (1976), 46(11), 2531-3

CODEN: ZOKHA4; ISSN: 0044-460X

DT Journal

LA Russian

CC 29-6 (Organometallic and Organometalloidal Compounds)

AB Reaction of 1,4-(Me<sub>2</sub>HSi)<sub>2</sub>C<sub>6</sub>H<sub>4</sub> with MeCH(OH)C.tplbond.CH in presence of H<sub>2</sub>PtCl<sub>6</sub> gave largely the hydrosilylation product 1,4-[MeCH(OH)CH:CHSiMe<sub>2</sub>]<sub>2</sub>C<sub>6</sub>H<sub>4</sub> whereas with PhCH(OH)C.tplbond.CH it gave mainly the dehydrocondensation product 1,4-(HC.tplbond.CPhCHOSiMe<sub>2</sub>)<sub>2</sub>C<sub>6</sub>H<sub>4</sub> with small amts. of 1,4-[PhCH(OH)CH:CHSiMe<sub>2</sub>]<sub>2</sub>C<sub>6</sub>H<sub>4</sub>.

ST silylbenzene acetylenic carbinol reaction; benzene silyl carbinol reaction; hydrosilylation acetylenic carbinol; dehydrocondensation acetylenic carbinol

IT 62170-46-1P **62170-47-2P** 62170-48-3P 62170-49-4P

62170-50-7P 62170-51-8P

RL: **SPN (Synthetic preparation); PREP (Preparation)**  
(prepn. of)

IT 2028-63-9 4187-87-5

RL: RCT (Reactant); RACT (Reactant or reagent)  
(reaction of, with bis(dimethylsilyl)benzene)

IT 2488-01-9

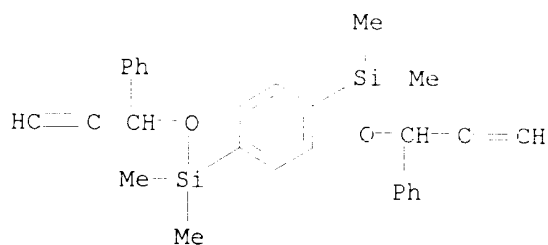
RL: RCT (Reactant); RACT (Reactant or reagent)  
(reaction of, with secondary acetylenic carbinols)

IT 62170-47-2P

RL: SPN (Synthetic preparation); PREP (Preparation)  
(prepn. of)

RN 62170-47-2 HCAPLUS

CN Silane, 1,4-phenylenebis[dimethyl[(1-phenyl-2-propynyl)oxy]- (9CI) (CA  
INDEX NAME)



L34 ANSWER 31 OF 34 HCAPLUS COPYRIGHT 2003 ACS

AN 1977:5518 HCAPLUS

DN 86:5518

TI Reaction of 1,4-bis(dimethylsilyl)benzenes with propargyl alcohol

AU Gverdtsiteli, I. M.; Doksopulo, T. F.; Gorelashvili, N. P.

CS Tbilis. Gos. Univ., Tiflis, USSR

SO Izvestiya Akademii Nauk Gruzinskoi SSR, Seriya Khimicheskaya (1976), 2(3), 215-21

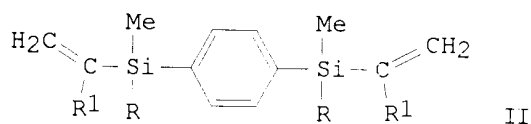
CODEN: IGSKDH; ISSN: 0132-6074

DT Journal

LA Russian

CC 29-6 (Organometallic and Organometalloidal Compounds)

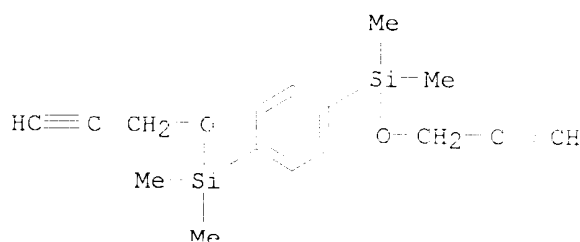
GI



- AB The addn. reaction of p-(MeRHSi)2C6H4 (I, R = Me, Ph) with the triple bond of CH.tplbond.CCH2OH in the presence of H2PtCl6 proceeds against Farmer's rule to give II (R = Me, Ph; R1 = CH2OH),. The yield of the addn. product is low (15%) since for I (R = Me), the dehydrocondensation product p-[(HC.tplbond.CCH2O)Me2Si]2C6H4 and the oxidn. product II (R = Me, R1 = CHO) were formed, and for I (R = Ph), a gum-like mass was produced. Reaction of I with Et3SiOCH2C.tplbond.CH followed by hydrolysis also gave II (R = Me, Ph; R1 = CH2OH) which on CrO3 oxidn. gave II (R1 = CO2H).
- ST silylbenzene propargyl alc reaction; benzene silyl propargyl alc reaction; hydrosilylation propargyl alc
- IT Hydrosilylation  
(of propargyl alc.)



IT 2488-01-9 3902-54-3  
 RL: RCT (Reactant); RACT (Reactant or reagent)  
 (hydrosilylation by, of propargyl alc.)  
 IT 107-19-7 61157-25-3  
 RL: RCT (Reactant); RACT (Reactant or reagent)  
 (hydrosilylation of)  
 IT 61157-17-3P 61157-18-4P **61157-19-5P** 61157-20-8P  
 61157-21-9P 61157-22-0P 61157-23-1P 61157-24-2P  
 RL: **SPN (Synthetic preparation); PREP (Preparation)**  
 (prepn. of)  
 IT **61157-19-5P**  
 RL: **SPN (Synthetic preparation); PREP (Preparation)**  
 (prepn. of)  
 RN 61157-19-5 HCAPLUS  
 CN Silane, 1,4-phenylenekis[dimethyl(2-propynyloxy)- (9CI) (CA INDEX NAME)]



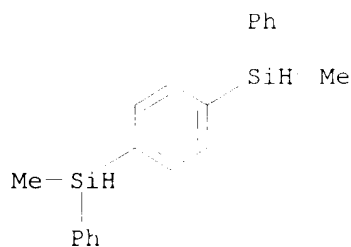
L34 ANSWER 32 OF 34 HCAPLUS COPYRIGHT 2003 ACS  
 AN 1975:171490 HCAPLUS  
 DN 82:171490  
 TI Synthesis and study of products from 1,4-bis(dimethylsilylethynyl) benzene and trialkyl- and dialkyldiethynylsilanes  
 AU Gverdtseteli, I. M.; Doksoopulo, T. F.; Melua, M. S.  
 CS Tbilis. Gos. Univ., Tiflis, USSR  
 SO Dokl. Vses. Konf. Khim. Atsetilena, 4th (1972), Meeting Date 1972, Volume 1, 97-102. Editor(s): Azerbaev, I. N. Publisher: Akad. Nauk Kaz. SSR, Inst. Khim. Nauk, Alma-Ata, USSR.  
 CODEN: 30AKA7  
 DT Conference  
 LA Russian  
 CC 35-3 (Synthetic High **Polymers**)  
 Section cross-reference(s): 29  
 GI For diagram(s), see printed CA Issue.  
 AB Silanes having vinyl and phenylene bridges between the Si atoms were prepd. via the reaction of disilylbenzenes with ethynylsilanes in the presence of H<sub>2</sub>PtCl<sub>6</sub>. Oligomeric ethylenic silanes were obtained by using diethynylsilanes as reactants. **Acetylenic** oligosilanes were obtained by the Grignard reaction of bis(bromomagnesiumethynyl)silanes with bis(chlorosilyl)benzenes. Oligosilanes obtained from p-(PhMeSiH)C<sub>6</sub>H<sub>4</sub>SiHMePh had elec. cond. 4 .times. 10<sup>-14</sup>-5 .times. 10<sup>-15</sup> ohm-1 cm-1 and conduction activation energy 1.55-1.7 eV. Elec. cond. was also obsd. for the oligosilane I [32107-86-1]. PMR data was given for the ethylenic silane II [40308-85-8].  
 ST silylbenzene oligomerization ethynyl silane; elec cond unsatd oligosilane  
 IT Electric conductivity and conduction  
 (of oligosilanes, contg. phenylic and ethylenic or **acetylenic**)

bridges)  
 IT Grignard reaction  
   (of silylbenzene with ethynyl silanes)  
 IT Polymerization  
   (oligomerization, of silylbenzene with ethynyl silanes)  
 IT Silane  
   RL: SPN (Synthetic preparation); PREP (Preparation)  
   (phenylene-contg., oligomeric, unsatd., prepn. and properties of)  
 IT 40308-85-8P  
   RL: SPN (Synthetic preparation); PREP (Preparation)  
   (prepn. and PMR of)  
 IT 32107-86-1P 39661-17-1P 55295-53-9P  
   RL: PRP (Properties); SPN (Synthetic preparation); PREP  
   (Preparation)  
   (prepn. and dielec. properties of)  
 IT 39661-17-1P  
   RL: PRP (Properties); SPN (Synthetic preparation); PREP  
   (Preparation)  
   (prepn. and dielec. properties of)  
 RN 39661-17-1 HCAPLUS  
 CN Silane, diethynyldimethyl-, polymer with 1,4-phenylenebis[ethylphenylsila  
   ne] (PCI) (CA INDEX NAME)

CM 1

CRN 3902-54-3

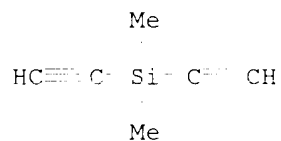
CMF C20 H22 Si2



CM 2

CRN 1675-60-1

CMF C6 H8 Si



L34 ANSWER 33 OF 34 HCAPLUS COPYRIGHT 2003 ACS  
 AN 1973:29889 HCAPLUS  
 DN 78:29889

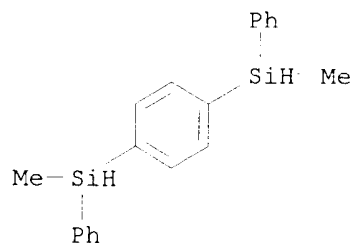
KATHLEEN FULLER EIC 1700/PARKER LAW 308-4290

TI Synthesis and study of unsaturated organosilicon compounds based on  
1,4-bis(methylphenylsilyl)benzene  
AU Gverdtsiteli, I. M.; Melua, M. S.; Doksoopulo, T. P.  
CS Tbilis. Gos. Univ., Tbilisi, USSR  
SO Zhurnal Obshchei Khimii (1972), 42(8), 1777-80  
CODEN: ZOKHAA4; ISSN: 0044-460X  
DT Journal  
LA Russian  
CC 29-6 (Organometallic and Organometalloidal Compounds)  
AB Reaction of p-C6H4(SiMePhH)2 (I) with Et3SiC.tplbond.CH in the presence of  
H2PtCl6 catalyst at reflux gave 45% p-C6H4(SiMePhCH:CHSiEt3)2;  
p-C6H4(SiMePhCH:CHSiMe2Ph)2 was similarly prepd., whereas the use of  
ClOH7SiMe2C.tplbond.CH (II) gave p-C6H4(SiMePhCH:CHSiMe2C10H7)2. II was  
prepd. (90%) from ClOH7SiMe2Cl and HC.tplbond.CMgBr in THF.  
Me2Si(C.tplbond.CH)2 and I gave 89% oligomeric polymer; a similar reaction  
was done with I and p-C6H4(SiMe2C.tplbond.CH)2.  
ST silane vinyl phenylene; ethynylsilane  
IT 39230-02-9P 39230-03-0P 39660-89-4P **39661-17-1P**  
**39758-71-9P**  
RL: **SPN (Synthetic preparation); PREP (Preparation)**  
(prepn. of)  
IT 1777-03-3 17156-64-8 39660-90-7  
RL: RCT (Reactant); FACT (Reactant or reagent)  
(reaction with bis(methylphenylsilyl)benzene)  
IT 39660-91-8  
RL: RCT (Reactant); FACT (Reactant or reagent)  
(reaction with ethynyl Grignard)  
IT 3902-54-3  
RL: RCT (Reactant); FACT (Reactant or reagent)  
(reaction with triethylethynylsilane)  
IT **39661-17-1P 39758-71-9P**  
RL: **SPN (Synthetic preparation); PREP (Preparation)**  
(prepn. of)  
RN 39661-17-1 HCAPLUS  
CN Silane, diethynyldimethyl-, polymer with 1,4-phenylenebis[methylphenylsila  
ne] (9CI) (CA INDEX NAME)

CM 1

CRN 3902-54-3

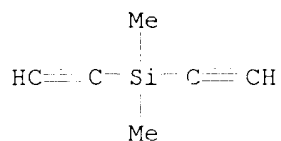
CMF C20 H22 Si2



CM 2

CRN 1675-60-1

CMF C6 H8 Si



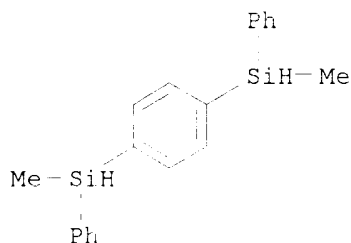
RN 39758-71-9 HCAPLUS

CN Silane, 1,4-phenylenebis[ethynyldimethyl-, polymer with  
1,4-phenylenebis[methylphenylsilane] (9CI) (CA INDEX NAME)

CM 1

CRN 3902-54-3

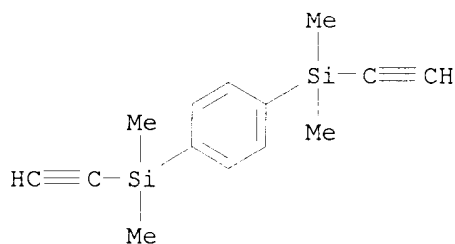
CMF C20 H22 Si2



CM 2

CRN 1871-88-1

CMF C14 H18 Si2



L34 ANSWER 34 OF 34 HCAPLUS COPYRIGHT 2003 ACS

AN 1972:419723 HCAPLUS

DN 77:19723

TI Synthesis and study of some unsaturated organosilicon compounds based on  
1,4-bis(dimethylsilyl)benzene

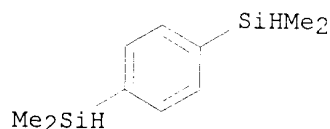
AU Gverdtsiteli, I. M.; Melua, M. S.; Doksopulo, T. P.

CS Tbilis. Gos. Univ., Tbilisi, USSR

SO Soobshcheniya Akademii Nauk Gruzinskoi SSR (1972), 66(1), 77-80

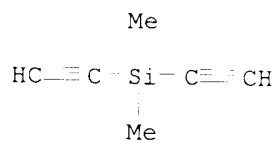
CODEN: SAKNAH; ISSN: 0002-3167

DT Journal  
 LA Russian  
 CC 29-6 (Organometallic and Organometalloidal Compounds)  
 Section cross-reference(s): 25, 23  
 GI For diagram(s), see printed CA Issue.  
 AB Addn. of 1,4-bis(dimethylsilyl)-benzene to HC.tplbond.CSiR2R1 (R = Me, Et; R1 = Et, Ph, C10H7) in the presence of H2PtCl6 gave vinylsilylbenzene derivs. (I). (HC.tplbond.C)2SiPh2 reacted with p-Me2SiHC6H4SiHMe2 in the presence of H2PtCl6 to give a polymer (II, n = 3, 4, 6). (HC.tplbond.C)2SiRR2 (R2 = Me, Ph, CH:CH2) and p-C6H4(SiC.tplbond.CHMe2)2 were prepd.  
 ST silylbenzene ethynylsilane condensation; vinylsilylbenzene; silylvinylsilylbenzene; benzene vinylsilyl; polysilylenephenylenesilylenevinylene  
 IT 1675-56-5P 1675-57-6P 1675-60-1P 1849-37-2P 1871-88-1P  
 4618-92-2P **37099-15-3P 37099-16-4P 37099-17-5P**  
 37170-52-8P **37433-11-7P** 37870-22-7P  
 RL: **SPN (Synthetic preparation); PREP (Preparation)**  
 (prepn. of)  
 IT 2488-01-9  
 RL: RCT (Reactant); RACT (Reactant or reagent)  
 (reaction of, with vinylsilane)  
 IT **37099-15-3P 37099-16-4P 37099-17-5P**  
**37433-11-7P**  
 RL: **SPN (Synthetic preparation); PREP (Preparation)**  
 (prepn. of)  
 RN 37099-15-3 HCAPLUS  
 CN Silane, diethynyldimethyl-, polymer with 1,4-phenylenebis(dimethylsilane) (9CI) (CA INDEX NAME)  
 CM 1  
 CRN 2488-01-9  
 CMF C10 H18 Si2



CM 2

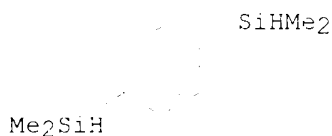
CRN 1675-60-1  
 CMF C6 H8 Si



RN 37099-16-4 HCAPLUS  
 CN Silane, diethynylmethylphenyl-, polymer with 1,4-phenylenebis[dimethylsilane] (9CI) (CA INDEX NAME)

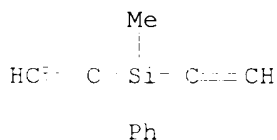
CM 1

CRN 2488-01-9  
 CMF C10 H18 Si2



CM 2

CRN 1675-56-5  
 CMF C11 H10 Si



RN 37099-17-5 HCAPLUS  
 CN Silane, 1,4-phenylenebis[dimethyl-, polymer with (1,4-phenylenedi-2,1-ethynediyl)bis[dimethylsilane] (9CI) (CA INDEX NAME)

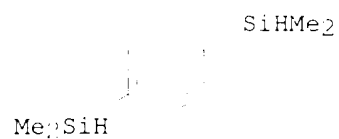
CM 1

CRN 46744-79-0  
 CMF C14 H18 Si2



CM 2

CRN 2488-01-9  
 CMF C10 H18 Si2



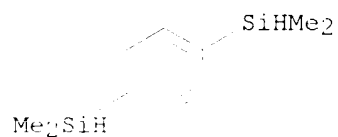
RN 37433-11-7 HCAPLUS

CN Silane, diethynyldiphenyl-, polymer with 1,4-phenylenebis[dimethylsilane]  
(9CI) (CA INDEX NAME)

CM 1

CRN 2488-01 9

CMF C10 H18 Si2



CM 2

CRN 1675-57-6

CMF C16 H12 Si

